

Care and Feeding ^{of} Southern Babies

O. H. WILSON, M. D.



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"Brer Fox, he wink his eye slow, en lay low,
en de Tar Baby, she ain't sayin' nothin'."

THE CARE AND FEEDING of SOUTHERN BABIES



*A Guide for Mothers, Nurses and
Baby Welfare Workers of the South*

By

OWEN H. WILSON, M.D.

Professor of DISEASES OF CHILDREN
VANDERBILT UNIVERSITY



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PREFACE

The excuse for adding another to the long list of Mothers' Guides is the necessity for special restrictions in diet and clothing for Southern babies, for whom similar works written for cooler climates are inapplicable and unsafe.

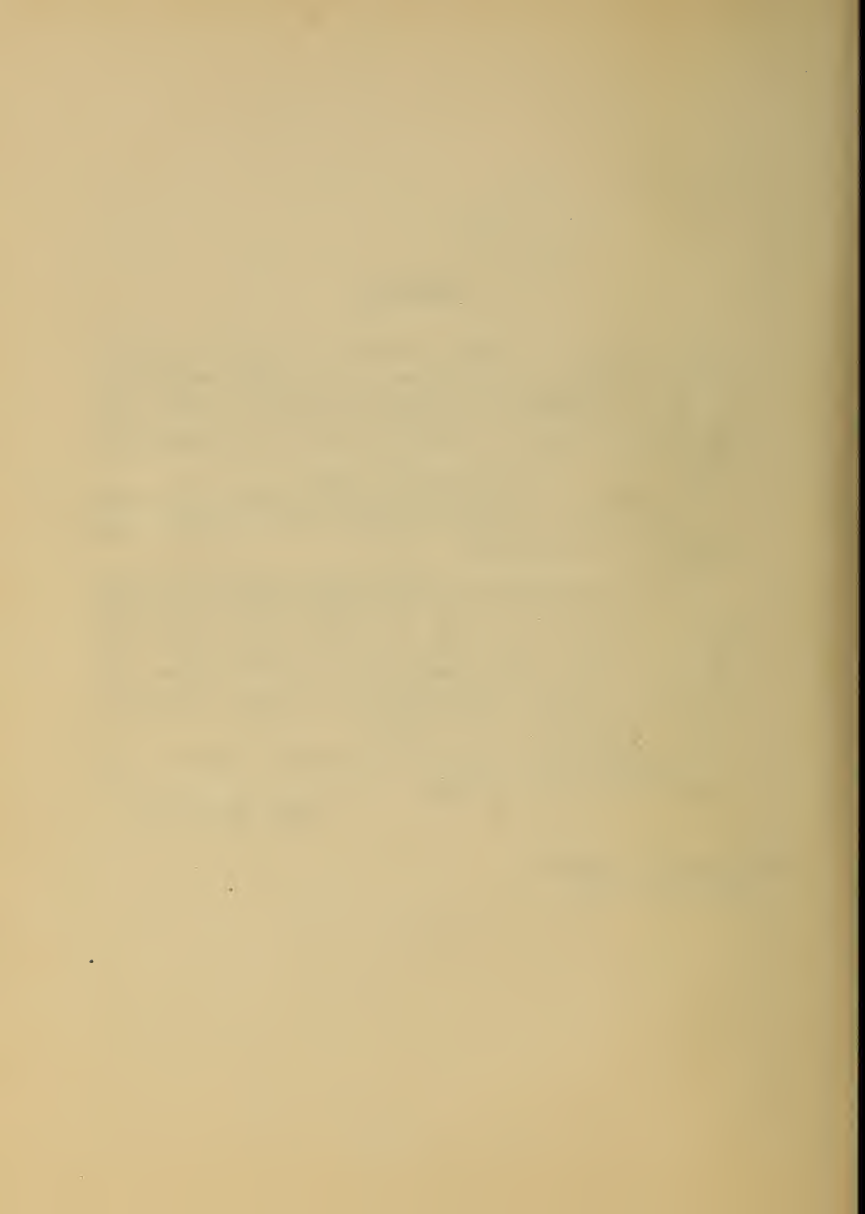
The purpose of the author has been to make this treatise as practical as possible, avoiding ultra-scientific and professional discussions.

The growing interest in child-welfare signifies the more general appreciation of the fact that correct feeding and hygiene during childhood determine the mental and moral, as well as the physical characteristics of the man. We cannot expect enterprising future citizens unless our babies are healthy and thriving.

The repetitions in the text are deemed necessary for completeness and emphasis.

OWEN H. WILSON.

1620 WEST END AVENUE,
NASHVILLE, TENN.



CONTENTS

CHAPTER I

	PAGE
THE CARE OF CHILDREN	
Nursery	9
Clothing	10
Airing	14
Baths	15
Sleep	16
Development	18

CHAPTER II

FEEDING DURING THE FIRST YEAR	
Breast Feeding	26
Mixed Feeding	37
Weaning	39
Wet Nursing	40
Artificial Feeding	42

CHAPTER III

FEEDING AFTER THE FIRST YEAR.....	61
Feeding in the Second Year.....	61
Feeding in the Third Year.....	68
The Care of the Mouth and Teeth.....	71

CHAPTER IV

THE TRAVELING BABY.....	73
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CONTENTS

CHAPTER V

	PAGE
COMMON DISORDERS USUALLY CAUSED BY IMPROPER FOOD..	76
Chronic Vomiting	76
Constipation	77
Diarrhœa	80

CHAPTER VI

CARE OF SICK BABY.....	84
Nursing	84
Forced Feeding	87
Baths, Packs, and Enemas.....	90

CHAPTER VII

EMERGENCIES	93
Sudden Vomiting	93
Indiscretions in Diet	93
Swallowing Foreign Bodies	94
Abdominal Pain	94
Croup	95
Convulsions	97
Nose-bleed	98
Foreign Body in the Nose.....	99
Foreign Body in the Ear.....	99
Earache	99
Burns and Scalds.....	99
Bruises and Wounds	100
Crying	100

CARE AND FEEDING OF SOUTHERN BABIES

CHAPTER VIII

	PAGE
MINOR AILMENTS	
Birth-marks	102
Protruding Ears	102
The Nervous Child	103
Good Habits	105
Bad Habits	106
Bed-wetting	107
Circumcision	110
Bad Colds	110
Adenoids and Tonsils	112
Prickly Heat	115
Chafing Buttocks	115
Sore Mouth	116
Intestinal Parasites	117
Rectal Prolapse	119
Sore Eyes	119
Inactive Liver or Bilious Spells.....	120
Nursing Cap	120

CHAPTER IX

MISCELLANEOUS	122
Starting Baby Correctly	122
Don'ts	124
Table of Development.....	125
Table of Heights and Weights.....	126
Recipes	127



CHAPTER I.

THE CARE OF CHILDREN

Nursery

Choice of Room. The ideal nursery should be the sunniest, airiest room in the house, preferably with a southeastern exposure, with windows on two sides. An open fireplace is the best form of heating. A closed stove or an oil or a gas heater is not satisfactory. To prevent accidents, the fireplace, radiator, or registers must be screened. Hardwood floors with washable rugs are desirable. The room must not be used for cooking or laundering purposes.

Temperature of Nursery Nearly all nurseries are kept too hot in winter. For young babies, 70° is the best day temperature and 60° the best night temperature. After the third month, 68° in the day, and at night (except for very frail babies) it may be allowed to go as low as 50°. Hang a thermometer near the baby, on the same level, and watch the temperature.

Ventilation and Light Avoid drafts, but have fresh air in the room at all times, even though it necessitates a fire to maintain the correct temperature. Fresh air and sunlight are as essential as to growing plants. Air the room thoroughly twice daily, once during the baby's outing and once before bedtime. Try to keep the source of light behind the baby, so it will not shine in his eyes.

Bed For the first weeks, the best bed is a bassinet or a clothes basket lined with muslin. Place in this a firm pillow or folded quilts, then a piece of rubber cloth or stork sheeting, then a quilted washable pad. Later, a metal bed with a firm, not soft, mattress, protected by a rubber or stork sheet, then the washable pad. Pillows are unnecessary. The covering should be a sheet and light blankets. In very cold weather, an eiderdown or a wool comfort may be used. Do not have the cover too heavy. Chronic cold feet call, not for more cover, but for local heat, as a hot-water bottle, and demand also an investigation of the food. It is often a symptom of indigestion.

Clothing

The object of clothing is to make the baby comfortable and to keep in body heat. Garments should be as light as is compatible with this purpose, not binding—he will not fall apart—not tight enough to restrict exercise, yet not so loose that they lie in folds and make him uncomfortable. Babies suffer much more from overheating than from cold, and require less clothing than adults, though a chilling is disastrous. In modern, evenly heated homes they do not need the excessive clothing that old-fashioned babies required. Wraps of different weights and lengths should be provided for outings, according to the prevailing weather.

First Clothes At birth, a belly-band, simply a torn strip of very light flannel, four inches wide and long enough to go around his body once, is snugly pinned or tied with tapes, so as to retain the cord dressing. Do not make it too tight; if so, it is not only uncomfortable but is a frequent cause of vomiting. After nursing, see that it has not become uncomfortably tight. A few weeks

after birth the baby begins to kick, and unless the band is too tight for comfort, it will slip up over his chest and impede breathing. At six weeks, except in unusually frail babies, it should be replaced by a knit band or a sleeveless shirt of the lightest flannel, which is pinned to the napkin. This gives all the protection necessary. Umbilical hernia, or rupture at the navel, is not due to the lack of bands, and not to faulty attention to the cord at birth, but to an abnormally large opening in the abdominal wall around the navel cord. This defect is easily remedied at about the age of four months.

The shirt, in winter, should be light wool, or better, a mixture of silk or cotton and wool. The double-breasted shirt is not a suitable summer garment, and not best in furnace-heated homes even in winter. The Skirts skirt should be of light-weight wool and must hang from the shoulders—never pinned around the chest. It should be twenty-seven inches long. Over this the dress, twenty-eight inches in length, preceded probably by an underskirt, for exhibition purposes, is put on.

The change to short clothes must be made at about four months. Some modern babies use them from birth with no detrimental effects. The demand for kicking room calls for short skirts, and summer or winter they should be used. In cool weather, a long wrap or a blanket may be put on for a few days until the baby is accustomed to the short skirts. Heavy cotton stockings are preferable to wool, which shrink in laundering. They should be pinned to the napkin. Shoes may now be used. They should be soft, adaptable to the shape of the foot, never binding, and above all things never too small. As long as possible use soft moccasins to allow the foot to develop naturally. If the ankles are weak, or the arches flat, do not try to correct too

early. The third year is soon enough, and by that time probably these defects will right themselves.

Do not change weights of underwear by the calendar. If the baby is perspiring, he is too hot. Do not allow him to suffer because it is not May 15th. Dress by the hour and endeavor to keep him comfortable all the time. More babies take cold by overheating and overclothing in hot rooms than by chilling and fresh air. Frail children, with a tendency to colds, should be especially protected from overheating. On the first hot days, remove the flannel skirt and knit band, leaving only the shirt, pinned to the napkin, and the slip. In the early morning or late in the evening, put on outside wraps to suit the change in temperature. This is safer than trying daily to remove the knit band and skirt at 10 o'clock and to replace them at 5 in the afternoon. They might be overlooked, and make him suffer all through the noonday heat. Outside wraps are more noticeable, easier to adjust, and equally as satisfactory. Later on, the shirt may be removed and the knit band substituted, and in the hot summer time the dress and the napkin are the only articles necessary. In our Southern climate, unless a child is very frail (I say this advisedly, in the face of time-honored superstition and high written authority), the flannel garment is not a necessity. On cold or damp days, extra clothing can well be put on the outside. If, however, your faith in the superstition that flannel must be worn over the stomach for the first two years is too strong, compromise by using only the lightest weight flannel knit band pinned to the napkin. This may be cut under the arms and over the shoulders and a muslin back adjusted, making two garments out of one.

A very young baby may be given an oil rub and put to

Sleeping Garments bed in the same weight garments as those worn during the day. At four months of age, in the winter, he should wear a shirt pinned to the napkin and a sleeping bag made of outing cloth (the only objection to this material is that it is highly inflammable), with long sleeves, and a drawing string at the bottom. Have it long enough to allow room to kick. In the summer, a knit band, or a knit band with the muslin back, and a thin gown, are enough, and in very hot weather, leave off the knit band.

Napkins Two sizes of napkins are necessary—18 by 36 inches for the first few weeks, then 22 by 44 inches later; or, if single ones are preferred, have them 18 by 18 inches or 22 by 22 inches. They should be snugly adjusted, but never tight enough to bind or cause red lines about the leg. Do not have too many thicknesses between the legs. A piece of thin cloth six inches square may be placed inside the napkin to catch the stool. This makes laundering much easier. Birds'-eye cotton is the best material for napkins. They should be used only once, and washed with a mild soap, and carefully rinsed in clear water. Many cases of chafing are due to soap or washing powder remaining after improper laundering. Soiled napkins must be kept outside the nursery, in a fly-proof receptacle. Never wash soiled napkins in the baby's bathtub. Rubber or stork cloth napkins are not permissible except for temporary use, as on a journey.

Adjusting Napkins The ordinary method of adjusting a napkin always awakens a feeling of sympathy for the helpless baby. It must be uncomfortable, and if applied too snugly might even cause bone deformity. No great improvement has yet been suggested, though the method in the accompanying diagram seems a little better. It is given, not as a substitute, but simply to show that there is more than one method, and with the hope

that some inventive mother may confer a blessing on unborn generations by improving even upon this.

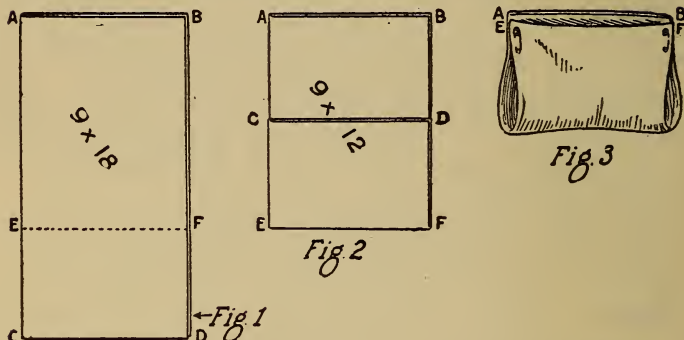


Figure 1, 18-Inch Napkin folded once; 2, same folded again; 3, Adjusted Napkin, points, E and F brought to A and B.

Airing

In the summer, take baby out as early as the second week; in the winter, at least after the first month. Then see that he has an airing every day of his life. Dampness, dust, and wind are his enemies. Wind can in a measure be avoided by a gauze veil, by a hooded carriage, and by avoiding the windy side of the house. He does not have to be in motion—simply roll the carriage to the proper place and let it stand. If the weather is cold, put a hot water bottle under the blanket. On damp or very cold or dusty days, dress him as for the outing and give an indoor airing by opening all the windows and closing the doors. Be careful of the atmosphere of melting snow. When the thermometer is below 24°, indoor airings are sufficient. Auto rides, if not too breezy, are permissible for young babies, but have no advantage over standing still in the buggy. A go-cart is a poor substitute for a roomy, comfortable carriage. It

is too cramped, a poor support for the back, and is too low on the ground. The only advantage is its convenience. It offers many chances for outings otherwise missed.

The First Bath

The first bath should be given as soon after birth as possible. After the doctor has used a few drops of silver solution in the eyes, and the baby has been anointed with some oil, preferably warm olive oil, to remove the gummy substance which covers him, then quickly bathe him in warm water, temperature 100° , using a mild soap. Watch the temperature carefully; babies have been scalded. Gauze or cotton makes the best wash cloth. He should be dried by patting, not rubbing, and rapidly dressed, to conserve the body heat; in fact, if very frail, he is simply anointed with oil and wrapped in soft woolen blankets and the bath postponed until he is stronger. Then put a hot water bottle under the blanket, but be very careful not to let it touch him. Even though the bottle seems only fairly warm, the skin is tender and quickly blisters.

At first, the mouth may be gently sponged out with gauze or cotton on a match or a wooden applicator. After this preliminary cleansing, it is best not to wash the mouth until after the teeth appear. The mucous membrane is too tender, and more harm than good is done. In my experience two babies have been fatally injured by washing the mouth, and this by trained nurses.

Subsequent Baths

Until the cord is separated and healed, the sponge bath must be continued, then a quick tub bath, at first with a temperature of 100° , lowered to 95° by the time he is three months old. Much backbreaking strain can be

avoided by using an elevated tub. A bath thermometer is almost a necessity. Always test the temperature of the water immediately before putting him into it. If you have no thermometer, use your elbow, not your hand. Bathe his face and head first, then sponge the eyelids and genitals with boric acid solution. Do not try to put anything in his eyes—simply sponge off the lids. Wash out the nostrils and ears as well as you can with a cloth on your finger. Do not go up inside of these cavities, as is frequently done, by using a toothpick and cotton. Only harm can be expected from this. Place him in the tub with your hand under his back for support, then bathe the rest of his body. When old enough to sit up, he may be allowed to play a few minutes in the water, but guard against chilling, which is indicated by the extremities being cold or blue after the bath. Use very little soap.

Make the baby like his bath. If necessary, bathe the face last, using fresh water, of course. Try the effect of floating toys in the tub.

Dry rapidly with a soft, old towel, more by patting than rubbing, and dress him lying in the lap, pulling the clothes over his feet.

Sleep

A young baby should sleep eighteen to twenty hours out of twenty-four; at one year, fourteen; at two years, twelve to fourteen; and throughout childhood, twelve hours. At first he should have two naps daily; after the first year, one is probably sufficient. Arrange naps so that they do not interfere with the airing. In winter, in our Southern climate, there should be one nap early in the morning and one late in the afternoon, leaving the midday for fresh air, while in the summer,

he must have the early morning and late afternoon for outings, the naps coming from 9 A.M. to 12 M. and 3 to 5 P.M. There is no harm, rather benefit, in outdoor naps. Sleeping porches are good for babies except in severe weather. Teach them to sleep without rocking, without foolers, both with and without light in the room, both with and without noise; only be sure that they are comfortable and well fed. They are creatures of habit even more than adults, and may be trained in almost any way.

Posture in sleep is varied, sometimes perplexing. Some babies normally sleep with their eyes half closed, some with the head thrown back, others on the elbow and knees, a most uncomfortable position. It is well to change the position, especially with young babies. Continually lying on one side might flatten the head. Under no circumstances should a child sleep with mother or nurse.

Restless sleeping may be due to one or more of the following causes:

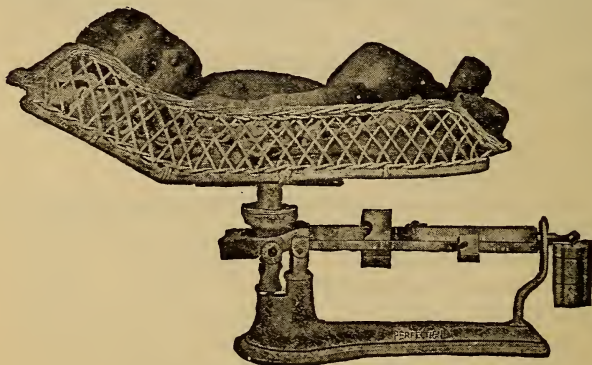
- Restless Sleep**
1. Improperly ventilated or overheated room.
 2. Hunger.
 3. Thirst.
 4. Soiled napkin.
 5. Indigestion.
 6. Constipation, especially if there is a lump in the rectum.
 7. Too much cover.
 8. Uncomfortable clothing.
 9. Heavy supper.
 10. Adenoids or cold.
 11. Irregular, excited bed hour.
 12. Acute illness.

Heavy covering or restless sleep, due to intestinal dis-

Kicking Off Covers comfort from indigestion, starts the habit of kicking off the covers. See if he is too warm. Babies need comparatively light covering. Correct any digestive disorder. Horse-blanket pins forcibly hold covers in place, but a better and a more comfortable plan is to fasten covers to the bed with a strip of elastic webbing or a pair of men's garters. This allows kicking, but the covers fall back in position.

Development

Birth Weight The average weight at birth is seven or seven and a half pounds. As a rule, the child's vitality varies with his birth weight. Unusually large babies are likely to be handicapped by severer obstetrical injuries. If under four pounds, the vitality is feeble, and special attention should be paid to keeping them warm and nourishing them, for usually they are too weak to be depended upon to draw the milk from the breast.



EXCELLENT BABY SCALES,

Weighing 31 Pounds by 1-4 Ounces. Manufactured by Jacobs Bros. Co., 223 Wallabout St., Brooklyn, New York

The weekly gain should be one-fourth to one-half pound; usually more the first six months than the second six months. The weight should be watched carefully, accurately weighing once (preferably twice) weekly during the first year. Get the net weight, always at the same time of day with reference to feeding. Failure to gain the four ounces (do not wait for a loss) is a danger signal which demands investigation. Daily weighings are apt to be perplexing.

At six months (usually at five), a normal baby should double his birth weight, weighing fourteen pounds; at one year, treble it, weighing twenty-one pounds. In the second year, the growth is less regular and not so marked, the gain for the entire year being only seven pounds. After the second year, the average gain is about three and a half pounds yearly.

Small or extra large babies do not follow the birth-weight rule. The five-pound baby, if flourishing, should weigh twenty-one pounds at one year old; and likewise, the ten-pound baby could not be expected to weigh thirty pounds at one year, though, at six months he is a little above, and the smaller one is a little below, the standard of fourteen pounds.

After four years, sometimes earlier, personal hereditary traits or tendencies show—that is, stoutness or tallness. Up to this time, we must not be satisfied unless the child conforms to the standard of weight, no matter how thin his parents may be.

Length is not such an important standard, and is earlier influenced by family tendencies. The average length at birth is twenty and a half inches; at one year, twenty-nine inches; after this the growth is three to four inches a year. Thus at five years

Length

his length should be forty-one inches and his weight forty-one pounds.

At birth a baby should grasp and almost lift his chest from the bed by holding to a pencil or your finger. He should hold his head erect at four months, play with a toy at five months, and sit alone at least at eight months, usually at six, if propped against a pillow. He should stand at one year; he should crawl, if he ever does, at about the same time, or even a little earlier.

Muscular Development

Age at which walking is begun is indefinite, but if he does not walk before eighteen months, the doctor should be consulted. Some babies walk as early as nine months. It depends upon two factors: muscular strength and an inherent sense of equilibrium, which varies even in adults. One man can walk a girder on top of a high building, while the thought of it makes another shudder. Some normal children, lacking in this sense of equilibrium, refuse to walk alone. In these cases, and in these only, a baby-walker may be used. Pigeon-toe, or toeing-in walking, is natural for beginners.

Walking

The leg is normally curved slightly. This curvature is soon outgrown. The permanent deformity of bowlegs is due to the softened bones of rickets, a disease produced by improper food and bad hygiene, and not to premature standing on the feet. Let a baby do anything he really wants to do, but do not force him, even if backward.

Bowlegs

At birth the largest circumference of the head around the forehead and occiput is thirteen and a half inches. At one year it should be eighteen inches; at two years, nineteen and a half inches; at three years, twenty inches, while the adult measures about

Size of Head

twenty-two inches. The anterior fontanelle, or soft spot, on top of the head, closes at eighteen months, frequently at fourteen.

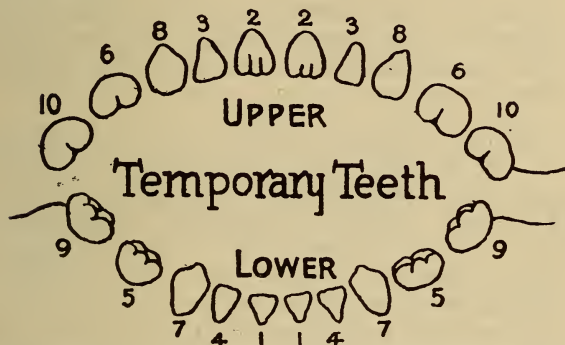


DIAGRAM ILLUSTRATING THE TEMPORARY TEETH,
 1, 1, 2, 2 Central Incisors; 3, 3, 4, 4 Lateral Incisors; 5, 5, 6, 6 First
 Molars; 7, 7, 8, 8 Canines, or Eye and Stomach Teeth;
 9, 9, 10, 10 Second Molars.

Teeth are the most important standard of development, indicating the progress of a child, and more or less the state of nourishment, though some perfectly normal children are backward in this respect. Upon investigation this usually proves an hereditary trait.

Teeth

There are twenty temporary teeth, divided into five sets of four each: four central incisors, four lateral incisors, four first molars, four canines (the eye and stomach teeth), and four second molars. As a rule (exceptions are numerous), teething begins at six months, and every three months a set of four is erupted, provided nutrition is progressing satisfactorily. The central incisors come from six to nine months; the lateral incisors from nine to twelve months; then the first molars from twelve to fifteen months; the canines from fifteen to

eighteen; the second molars rather irregularly, but after eighteen months, sometimes even as late as the third year. Usually, the lower two of a set precede the upper. An exception to this is that the upper lateral incisors quickly follow the upper central incisors. The lower lateral incisors are quite irregular, sometimes being delayed until after the canines.

To the eruption of the teeth were once attributed all the ills of baby days, from diarrhœa to convulsions. Mere teething is never responsible for serious illness. During the immediate process the gum is red and swollen, there is often restlessness and slight temperature—not over 100°—loss of appetite, and certainly a weakened digestive power, so that food which has previously been digested easily, disagrees. Teething cannot cause severe illness, but by weakening the digestion, slight disorders may quickly become serious.

Disorders
Caused by
Teething

The eyes of all new-born babies are a dull blue, and begin to take permanent color only after three or four months. During the first weeks, the eyes may not be under muscular control, hence cross-eye is not uncommonly observed. It is not permanent and needs no treatment.

Eyes

Hair

The first hair wears off about the age of four months and is slowly replaced, probably by an entirely different colored growth.

At one year a baby should be able to say single words, such as “mamma” and “papa.” Girls talk earlier than boys. Nouns are learned first, then verbs, then adjectives, then adverbs, and finally pronouns, which seem to puzzle their minds immensely.

Speech

Late speech is due to one of three causes: deafness,

idiocy, or indifference, the last the result of spoiling.

**Delayed
Speech**

The process of learning and using a word is quite interesting. For instance, take the word "water."

Through his senses the child must learn the characteristics and uses of water, then he must watch his mother's lips, then imitate the sound she makes. As every word in his vocabulary is acquired by this same process, it is not astonishing that if he can make a sign and get what he wants, he will much prefer to do it. By obeying his signs and making speech unnecessary, some normal babies do not talk until they are four years old, frequently learning with a younger child who will not interpret these signs.

**Tongue-
tie**

Tongue-tie is a rare deformity, the tongue being bound down to the floor of the mouth so closely that it cannot be raised even to the roof of the mouth in the process of sucking. It never causes delayed speech, as sound is made in the larynx and not by the tongue, but may possibly be the cause of incorrect enunciation of certain lingual sounds.

**Baby
Talk**

Baby talk is the result of imperfect imitation of correct speech. It is cute and interesting at first, but should never be used by adults to children. They are doing their best to imitate you. Do not set a child an imperfect copy, otherwise the imperfection may persist until after he is old enough to be embarrassed by it. If he has special difficulty in the enunciation of certain sounds, train him early to overcome it.

**Stammer-
ing**

Stammering appearing before the eruption of the permanent teeth is usually temporary. At any age it is a symptom of an overwrought nervous system, and should be so treated. (See page 103.)

The first bowel actions are tarry black and usually

come within twenty-four hours after birth. Even if delayed, no purgative is necessary if baby is normal.

Stools The first secretion of the breast before milk appears is supposed to act as a laxative. When milk is taken, yellow spots should begin to show in the black stools, and by the fifth day they should be entirely the normal color, orange yellow. Throughout the first year there should be one to four stools daily. One is sufficient; four not too many. The consistency and color is about that of the yolk of an egg. If cows' milk is used, the color tends more to lemon yellow than to orange and the stools are more consistent. If cereal water or malt sugar is used in preparing the food, they are oak brown. Castoria causes a dark brown stool.

The bladder contains urine at birth which should be expelled within the first twenty-four hours. It is not unusual for urine not to pass even until after the second day. This delay is of no significance. Continuous crying the first three or four days of life, is often due to a deposit in the bladder or kidneys of crystals of uric acid, which shows as a stain on the napkin, and after it all passes the pain is relieved. The treatment, of course, is giving water to wash it out.

Urine

For the first four days the bladder is emptied every four to six hours; afterwards throughout infancy at about two-hour intervals. The urine should be perfectly clear and as colorless as water. Condensed milk or other foods with an excess of sugar seem to cause an excess of urine. Large quantities of fat in the food may produce an ammoniacal odor.

Scant urine is suggestive of either too little fluid—that is, milk—or excessive perspiration. On the first hot days,

Suppression of Urine while winter clothing is still worn, little or no urine may be passed for twenty-four or forty-eight hours, as so much water is lost through the skin.

This suppression seems to do little harm except to make the baby fretful. The treatment is giving water and keeping cool.

When the kidney function is abnormal, the urine should be examined, but it is sometimes difficult to obtain it.

Methods of Collecting Urine for Examination

An easy way is to catch the urine on a sponge or cotton, and squeeze it out. This is satisfactory for a chemical examination, but not for microscopical work, which is more important. For boy babies, fasten a bottle or test tube to the penis with a little adhesive plaster. The best method is to give plenty of water, then wake just before finishing a long nap, and apply a warm wet cloth over the bladder and place a clean cup in position to catch the specimen, which will come in a few minutes. Do not wait for him to awaken, as it is usually just at the moment of emptying the bladder. Use no talcum powder while trying to get the specimen. If this method is not successful, scrub a piece of rubber sheeting, wash baby free from lint and powder, and have him lie on it with hips in a depression until the urine is passed, then collect it with a spoon.

CHAPTER II.

FEEDING DURING THE FIRST YEAR

Breast Feeding

The baby is but an exponent of the food and care he gets, and human milk is preëminently built for a baby, and he for it.

Breast-Feeding

In former times, breast-feeding was almost universal; a bottle-fed baby was a curiosity. He was nursed when he cried and could always rely upon a bountiful supply, regardless of irregular habits. Fifteen years ago it was rare to see an entirely breast-fed baby. This was due to the strenuousness of living conditions, and not (as has been frequently attributed) to the unwillingness of mothers to nurse their offspring. They tried to keep up nursing on the old haphazard plan and at the same time fulfill modern social and domestic demands. Owing to better regulation, maternal nursing now seems to be more and more successful.

Hygiene of the Nursing Mother

It is not necessary that a good mother become a recluse, far from it; but she must recognize that to supply the baby is her chief aim in life; that for the first few months it is a big undertaking, and that other things must be subservient. The strain is certainly much lessened by proper training and regularity.

A trained baby is a great pleasure; an untrained baby a ceaseless care. Training should begin at birth. A new mother should live as normal and regular a life as possible. Above all things, she should get plenty of sleep.

She is obliged to lose some with the baby, so let her keep up the habit of a midday nap, or rest, and an early retiring hour during the entire nursing period.

Exercise She should have as much exercise or fresh air as is consistent with her condition and strength. This, of course, depends upon the age of the baby and the difficulties of her confinement. As a rule, she can exercise to any extent that does not cause back-ache and a dropping feeling in the pelvis, or that does not produce an increase or a return of the flow, which should cease at six weeks.

Diet She should have a liberal diet, avoiding any risk of digestive disorder. As a rule, any food which agrees with her will produce good milk. Vegetables and fruits should be taken freely from the beginning.

It is extremely rare that foods, even acid fruits, taken by the mother cause colic in the baby. She should drink plenty of fluids, but not to such an excess that it will diminish the appetite for more substantial things. By all means should she avoid nervous and physical over-exertion, which in most cases is the cause of indigestible or poor milk. The milk secretion seems to have a closer connection with the nervous system than with the digestive.

Contra-indications to Breast Feeding Few indeed are the contra-indications to nursing. Tuberculosis, Bright's disease, or other wasting conditions might demand weaning, but remember it means lessening the baby's chances to live and grow normally, and increases susceptibility to disease.

Acute illness, unless severe, does not require weaning. The baby should be put to the breast regularly if the mother is not too ill, but as the supply is

apt to be diminished, artificial food should be used to fill out the nursing.

Colds are contagious, and if the mother is so affected she should hold a handkerchief over her mouth and nose while nursing, and keep the baby in a different room as much as possible.

The return of the menstrual flow does not mean that a baby should be weaned. As a rule, the milk supply is disturbed during the time of flow, but not permanently so. It is advisable to begin with one artificial feeding daily when the period is regularly established. This does not apply to the slight appearance of the flow, which is not infrequently seen about two months after birth. This is really a hemorrhage from over-exercise, and not the establishment of the regular habit to be repeated monthly.

**Effect of
the Men-
strual
Flow**

Even pregnancy is not a signal for sudden weaning. The milk of a pregnant woman is not poisonous, as has been supposed. However, no woman can successfully nourish herself, the baby in the womb, and the one at the breast; one or the other will suffer, and usually it is the babe at the breast, through deterioration of the quantity and quality of milk—not poisoning, only starvation. Mixed feeding should be begun when pregnancy is suspected and increased to gradual weaning.

Nursing Habits

As soon as the mother is rested after the birth, put the baby to the breast for five minutes at each side, every six hours until the milk appears, which is usually on the third day. This accustoms the baby to taking the nipple, gives him the fluid (colostrum) secreted before the milk, which is supposed to act as a purgative,

**Before
the Milk
Comes**

and also helps the contraction of the enlarged womb. Before and after nursing, sponge the nipple with boric acid solution (a level teaspoon to one-half pint of water). Do not let him nurse too long—ten minutes is sufficient—otherwise he will water-log the nipples and make them tender.

Between nursings give one-half to one ounce of warm boiled water, unsweetened. For the first weeks this water should be given in a spoon, otherwise it might make him neglect the breast; but after this, try to teach him to take it from a bottle and nipple.

As soon as the milk flow is established, begin his regular schedule, nursing alternate breasts ten to twenty minutes, at 6, 9 A.M., 12 M., 3, 6, 9 P.M., and 2 A.M., giving warm water between times. This may be made one hour later at each interval if the mother prefers it, beginning at 7 A.M. Wake him up for the day nursings. After nursing, baby should lie quietly in bed for at least half an hour. Allow but one nursing from 9 or 10 P.M. to 6 A.M. Really there is no necessity for even that, so do not awaken him for it. The intervals must be counted three hours from the beginning of one nursing to the beginning of the next. I am certain that the average baby thrives better on the three-hour interval than nursing every two hours, but I am not sure that four hours would not suit some better. Whatever interval you select, be exact about it. Wake him a few times and it is surprising how quickly he learns to wake with clocklike regularity.

**Nursing
Interval**

As a rule, alternate breasts are used, the right at 6 A.M., 12 M., 6 P.M. and 2 A.M.; the left at 9 A.M., 3 and 9 P.M. The next day begin with the left. If he is allowed to have both breasts at one nursing, he may neglect to

empty them thoroughly, taking only the first portion, which draws easily, leaving the richer part, the strippings, in the breast. Nothing is so deleterious to the milk supply as partial emptying of the breast. A lazy milk boy will dry up a cow. If there is too much milk for one baby, at least once a day completely empty the breasts with a pump; or, better still, help out some suffering artificially fed little one, but be sure that he is healthy.

Time of Each Nursing The time limit for each nursing is from ten to twenty minutes. Too rapid nursing, less than ten minutes, may cause vomiting or indigestion, just as bolting the food does. Too rapid flow of the milk may be prevented by a slight pressure on the milk ducts with the fingers near the nipple. If this is not effective, try nursing uphill—that is, the mother sitting upright in her chair, holding the baby's head high, making him draw the milk up instead of having him below the breast with the flow assisted by gravity. If this fails, nurse him one or two minutes then let him rest, or cry, for two minutes, and so prolong the feeding. Too slow nursing means that the baby is lazy. Take him away at the end of twenty minutes, even if he is not satisfied, and the next time he will work harder. It may also mean an insufficient supply of milk. If the milk is not there, prolonged nursing will not make it, but will worry the mother and tend to injure the nipple. Take him away after twenty minutes, and resort to some other method for filling him up. (See "Mixed Feeding," page 37.)

Midnight Nursing The 2 A.M. nursing is the only one that baby should not be wakened for, and he usually soon forgets it and sleeps from 9 or 10 P.M. to 6 A.M. There is no necessity for this nursing, and as soon as he is willing let him omit it. It must be stopped at four months, if not before. This can be done by letting him

cry it out a night or two; or, better, by giving him water, or by substituting an artificial food at this interval, and reducing the quantity given one ounce each night. Nothing helps the mother's supply so much as a full night's sleep, and once baby gets in the habit of sleeping from 9 P.M. to 6 A.M., under no circumstances begin night feeding again. Early waking hours are sometimes troublesome. Do not begin early feedings. Try giving warm water, and make his afternoon nap shorter, or his bedtime a little later. Do not disarrange his intervals.

Unsatisfactory Nursing

A satisfactorily nursed baby must gain one-fourth to one-half a pound a week, nurse ten to twenty minutes, and sleep, or appear satisfied afterwards, and must sleep soundly day and night.

Unsatisfactory nursing is shown by failure to gain, by prolonged nursing (over twenty minutes), crying too much, and poor sleeping. These symptoms may be explained by disordered quality or quantity of milk.

Over-rich milk is the most common defect. Poor milk is very rare except in factory districts, where mothers are overworked or underfed, or both. When a mother gets up from her confinement, or returns from the hospital, and the nurse leaves, she is confronted with new responsibilities, and almost invariably becomes nervous, and the baby is upset. Few babies escape. Sometimes it shows as a diarrhœa, possibly ten or twelve chafing stools daily. This is not serious in breast-fed babies, and disappears when normal habits for the mother are reestablished.

Colic is a more distressing symptom. It is indigestion due to over-rich food, caused by the mother's nervous

Colic condition, and usually increased by bad nursing habits. Certainly it cannot often be explained by the mother's dietetic errors. Her food, of course, should be restricted as before suggested; and her rest hours must be safeguarded.

Symptoms of Colic Colic begins usually at three or four weeks, coincident with the mother's first attempt to care for the baby and possibly to attend to her household duties as well. The child is thriving, making his weekly gain, may at other times appear to be perfectly healthy, stools normal, or possibly showing a little white curd on a greenish or yellowish background. Occasionally it may be associated with chafing diarrhœa. He nurses well and contentedly, sleeps a few minutes, then wakes up screaming and may continue until exhaustion stops him. He draws up his feet, which are cold; the abdomen is tight; he is evidently in pain. It is a great temptation to nurse him again. This is probably the only way to quiet him temporarily; he cannot cry and nurse too, and the warm milk is soothing, but it is only adding fuel to the fire.

His crying must be stopped, else the mother will be more nervous and her milk even worse tomorrow—a vicious cycle: baby's crying makes the milk bad, and that causes more colic next day. Sooner or later the milk, plentiful but too rich in quality, becomes deficient in quantity, owing to the mother's increasing nervous strain, and weaning, with its woes, may be necessary. Colic is rare in well regulated babies; start them right and keep them right.

The Treatment of Colic Regulate nursings. If he is on a three-hour schedule, go to four hours. Do not allow him to oversleep his interval, even though it is a great temptation to let him sleep on, for he will then nurse too fast and take too much, causing a worse spell next time.

The mother should take as much fresh air and exercise as are consistent with her strength; her diet should be normal, avoiding an excess of meat or very acid fruits. She must rest, even if she has to go to another house to do so. Temporarily relieve her of all responsibilities and give the baby plenty of warm water between nursings. When possible, give before nursing one teaspoon of lime water in two tablespoons of warm water. The so-called three-months colic means that the indigestion lasts until the mother has become accustomed to the care of the infant and has resumed her normal life, which is usually at the end of three or four months, hence the popular term, "three-months colic."

By regulating mother and babe, colic can be cured, but this requires several days at least to take effect. For temporary relief, you must resort to some more rapid means. The pain must be speedily stopped. He is suffering intensely, the mother sympathizing. The following list of perfectly harmless remedies is suggested:

**Temporary
Relief**

First—Wrap him in a warm blanket.

Second—Put a teaspoon of cooking soda (sodium bicarbonate) in a glass of hot water, and give him a tablespoon of this mixture. If the cause of the trouble is an acid stomach, the relief is immediate.

Third—If no results in two minutes, give ten drops of milk of asafœtida in a tablespoon of hot water. If relief is to be expected from this, it will be immediate, following belching.

Fourth—If not quiet in two minutes more, see if the trouble is not in the lower bowel. Give a warm-water enema, using an ear and ulcer syringe, not the ordinary hard-tipped infant syringe.

Fifth—If not quiet in two minutes, give ten drops of milk of asafœtida in a syringe full of water, by enema.

All these remedies are perfectly harmless and all may be given within ten minutes.

If he is still suffering, the site of the indigestion must be in the small intestine, and not amenable to immediate treatment. But the child is in pain, and for his sake, as well as the mother's—and, incidentally, for the rest of the family—he must be relieved; otherwise, the milk of the nervous mother will cause another spell tomorrow. Much as I dislike to give it, paregoric is now indicated in repeated doses until the child is quiet, the amount to be regulated by a physician.

Logically it would appear that as there is something undigested in his intestines, it should be removed by a purgative, but this will do no good, rather harm. **Purgatives Must Not Be Used** It would be some hours before we could expect relief from the purgative and then it only cleans out the undigested breast milk; and unless weaning is resorted to, more of the same indigestible food is taken, hence a purgative is contra-indicated. Relieve the pain for the sake of both mother and baby. Use paregoric, regretfully, until you have time to regulate baby and mother, and thus permanently correct the condition. This is in strong contrast to the pernicious use of opiates or soothing syrups for their temporary relief, with no measures taken for a permanent cure.

Deficient Quantity of Milk Causing Hunger Hunger is a more common trouble than colic. While occurring at any age, it is more frequent in the early months. A hungry baby will cry and make mother nervous and the milk soon becomes bad in quality, hence the two defects sooner or later go hand in hand.

The previously good baby begins to cry at night and

Symptoms of Hunger to sleep badly. The milk supply is always lower in the afternoon. He goes to bed hungry and cries during the night. It is not necessarily accompanied by a loss of weight at first; he may still make his weekly gain, just as one may be healthy, strong, and well nourished on two meals daily, but sleep badly if supper is omitted. Of course, if the condition persists, he fails to make his gain, then loses. The stools may be constipated, rather small in amount, though apparently otherwise normal, but soon the milk becomes disordered in quality, the result of mother's loss of sleep, and the stools may consequently be green and curded. The urine is usually scanty. Of course, the failure to gain will soon be noted, but it is highly important that the condition should be recognized before this, as it is so much easier to correct in the beginning. Do not wait for a loss. Suspect it at a failure to gain. His behavior may show it; he cries to nurse frequently, sucks his fists, is very thirsty. At the nursing interval he either wants to nurse longer than twenty minutes or takes a few draws and begins to "hunch," never going to sleep at the breast.

A mother's own feeling as to the breast supply is most misleading. She may be sure that she has plenty, and to

Weigh Before and After Nursing demonstrate it, presses out a few drops after the baby has finished. This is no proof. The only positive way to find out how much he is getting is by careful weighing before and after nursing, on accurate scales, not necessarily the net weight, but with clothes and all. Do not even change his napkin should it happen to be necessary between the two weighings. In this way we can find out exactly how much he gets from the breast. Spring scales are worthless in this all-important differentiation. Get a good balance scale weighing at least to a half ounce. Much trouble, probably a life, can

be saved by determining this point early. It is impossible to differentiate between colic and hunger except by this careful before-and-after weighing. Many babies are drugged into sleep when they are really hungry.

If scales are not accessible, a diagnosis may be made by the crude method of offering him cereal water just after his nursing. If he takes it greedily, it indicates that he is not getting enough milk.

The outlook is gloomy unless recognized early; otherwise the milk soon deteriorates in quality as well as quantity and the baby is badly upset. If we are
Treatment for Hunger sure the deficiency is temporary, due to some slight illness or nervous strain on the mother's part, the suggestion of offering the barley water after each nursing may tide over until the full supply is reestablished. He will probably refuse the extra feeding in the forenoon and take one-half or all of it at the afternoon nursings. While not much of a food, cereal water is a filler, and will satisfy him.

Unfortunately, we do not know of any drug or procedure which will permanently increase the flow of milk. As before suggested, the mother should live a normal life, take a normal diet, with a slight excess of fluids, preferably milk or buttermilk, and should have plenty of rest and as much fresh air and exercise as are consistent with her physical strength. If these regulations have been adhered to, it is useless to expect any great results from diet or drugs. Too much fluid, be it tea, malted drinks or what not, while possibly temporarily increasing the flow of milk, does permanent harm by weakening the mother, as she cannot take her usual amount of more substantial food if constantly filled up on liquids. Besides, the excess may also disturb her digestion. An extra glass of milk or buttermilk between meals and at bedtime, with

her normal amount of fluid at meals, is ample. The only way to remedy the insufficient quantity of milk is by mixed feeding—that is, giving some artificial food in connection with the breast. Mixed feeding has many advantages and few disadvantages, and makes possible the use of every drop of breast milk.

Mixed Feeding

By mixed feeding is meant the use of artificial food, in addition to breast milk. If in spite of good hygiene and care of the mother, with no temporary disorder to explain it, it is ascertained that the milk supply is deficient in quantity, mixed feeding offers the only permanent relief, retaining the benefits of as much human milk as is secreted. We may consider it under two heads: complemental and supplemental feeding.

Complemental Feeding

Complemental feeding is the filling out of each nursing with a sufficient amount of artificial food. This is by far the preferable method, especially for babies under four months, giving each breast the regular nursing stimulus necessary to the maintenance of the regular flow. The best method of determining the amount to be given is to weigh carefully before and after nursing, thus ascertaining the amount he gets, and fill out to proper amount. (See page 48.) This is troublesome. The quantity may be estimated by watching the length of time he nurses satisfiedly before beginning to show that he is working for nothing. Then give one-fourth, one-half or three-fourths of a full feeding, according to this observation.

If this method is not satisfactory, offer a full feeding after each nursing, and let him take what he wants. The appetite is a fair guide; even if too much is taken, it will

be regurgitated and no serious harm be done. The mixing of human milk with artificial food is not a disadvantage, but rather facilitates the digestion of the latter.

Supplemental feeding is giving an artificial food alone at one interval, allowing the breast to rest completely.

Supplemental Feeding . At the next nursing after this rest, both breasts should be given. The best time for this artificial feeding is at 6 P.M. This is chosen because the supply of breast milk is lower in the afternoon and because it allows a full nursing, both breasts, at bedtime. Babies sleep better on a full nursing. There is no harm, however, in changing this feeding occasionally to the forenoon or even to the last feeding at night, should it be more convenient.

It is not often permissible to give more than one substitute feeding. The milk supply will fail unless the breasts are stimulated regularly. Should more assistance be needed, it is wiser to fill out other nursings with a partial quantity (complemental feeding). When the breast supply is very low, both breasts may be given at 6 A.M., 12 M. and 6 P.M., and a feeding at 9 A.M. and 3 and 9 P.M., even giving a partial feeding after the nursings, if not satisfied with both breasts.

Mixed feeding has many advantages: it accustoms the baby to taking an artificial food, which is not always easy to adapt. If begun before it is absolutely needed, we can try one food mixture, and if it disagrees, go back to the breast milk, assisted possibly by cereal water, and straighten him out, and then try another. If you wait until artificial food becomes a necessity, the second trial must be made not upon a well baby, but an upset one. If the mother should become ill, she knows what food will agree with the baby, and complements each nursing. It gives the mother a chance to get out and

makes nursing less strenuous. If the baby happens to be ill, the artificial food must be stopped immediately. The breast will probably be ample to supply the demands of the diminished appetite, or some harmless mixture, as a cereal water, may be used to fill out.

As to choice of food to be used in mixed feeding, of course cows' milk mixtures are to be recommended as most nutritious and better balanced, but when five-sixths or six-sevenths of the food is breast milk, we need not be so particular. Cows' milk requires intricate care as to cleanliness, refrigeration, and detailed preparation, as much for one feeding as for the entire day's supply. This care devolves upon the mother, and the necessary worry frequently further diminishes her own supply, hence it is often best to use a prepared food, such as dry milk, requiring the minimum of detail in preparation, and no refrigeration, and which may be safely left in charge of inexperienced hands while the mother is resting.

Weaning

Weaning is but an extension of mixed feeding. As the breast supply grows less, increase the amount of artificial food until weaning is accomplished.

The choice age is twelve months, beginning with one artificial feeding at the ninth month. Never wean suddenly if possible to avoid it. Do not wean during an acute teething period nor in the summer, even if partial nursing has to be prolonged to fifteen months. Entire nursing after the first year is precarious. Nursing, even partial nursing, after fifteen months is almost always harmful. Such babies are not well nourished, become nervous, poor sleepers, have capricious appetites, and they take cows' milk poorly. The strain

upon the mother to furnish the diminished quantity at this age is even greater than when giving a bountiful supply.

In weaning, it is sometimes very difficult to train a baby to take cows' milk in any form without starving him into it. Condensed milk seems more readily taken than any other form of artificial food, and by gradually replacing the condensed with cows' milk, we can change to the latter. Sometimes it is necessary to use flavorings, such as salt, vanilla, nutmeg, or even tea or coffee in the food to induce him to take it, of course, gradually reducing the flavoring so that within a week it is given plain. Buttermilk may be well taken when other forms are refused. If the baby is old enough to take starch, the milk may be poured over bread crumbs or cereal in a saucer, and the amount of crumb or cereal gradually reduced. One or two feedings may be forced. (See page 87.) He may take it well after once getting accustomed to it.

It is usually unsuccessful to attempt to train babies to take a bottle and nipple after seven months of age. Bottles are an additional care and best dispensed with. Their only advantage is that a baby will take a bottle and go to sleep on it, but must be wide awake to be successfully fed from a cup or spoon.

Wet Nursing

Successful wet nursing throughout infancy is so rare nowadays that it would hardly be reckoned as a method of feeding. Wet nurses are to be used only for upset babies. Get them straight and then, by a process of gradual weaning, adjust a suitable milk mixture. Thus a single wet nurse has served to adjust twelve sick babies in one season.

Your physician should be consulted in the selection of a wet nurse, and should make a careful examination, both of mother and babe, to exclude syphilis and tuberculosis; then be sure that your baby really gets the amount he needs from the foster-mother, by carefully weighing before and after nursing.

It is better to draw out the milk and feed it, for thus we know how much he gets. Milk so withdrawn will keep on ice just as cows' milk. It may be pasteurized, if suspicious. There is no reason why the wet nurse's baby should correspond in age to your baby. He should, however, be not less than two weeks old nor over one year old. Superstition among Southern wet nurses prevents many an ignorant foster-mother from giving milk to a baby of the same sex as her own. Of course, this is groundless, and you may tell her that if the milk is withdrawn it will do her own baby no harm.

Examination of the milk will show its quality, though the healthy condition of the wet nurse's baby is the best testimony. Milk examinations are misleading. The first milk drawn may appear very blue and poor, but the strippings, or the last drawn, are much richer, and the mixture may be satisfactory. A liberal specimen should be sent to the laboratory to get reliable results. There is no harm in having the milk from several wet nurses. It is more apt to be an average, just as herd milk is more uniform than the milk of one cow. A wet nurse with a dead baby is rarely satisfactory.

There is little or no danger of contracting syphilis or tuberculosis in milk so withdrawn and fed to the baby. The syphilis germ is of feeble vitality and does not live long in milk, especially if kept on ice. Tubercular mothers are not likely to have enough milk

to draw out. Syphilis is contracted by getting the blood from a sore nipple into an abrasion on the child's mouth; tuberculosis, by the child inhaling the breath of the tubercular mother while at the breast. These are strong reasons for preferring the method of feeding milk drawn out instead of putting the child directly to the breast.

When using a wet nurse, it is your duty to see that her baby is not suffering from the deprivation. For the sake of all concerned, see that he is well fed and healthy.

Artificial Feeding

For Normal Well Babies It is with extreme diffidence that this subject is approached. It is not one that can be dealt with superficially. Each baby is an individual proposition, requiring a special modification. Human milk, containing human fats, proteids, sugar, and salts, is built for the baby, and the baby's digestive power for it, and the problem of substituting a mixture, even though containing the same elements, is a difficult one, often taxing the skill and patience of the most experienced. In spite of science, the question is one concerning which we are woefully ignorant. The only justification for discussing it here is that unless some idea of feeding normal babies is given, they might be put upon a patent food; often an unbalanced, unsatisfactory nourishment, sooner or later to be followed by disorders of nutrition. The following directions are only for normal well babies; the care of others demands experience.

The best available substitute food for any baby under one year of age is cows' milk, in some of its varied forms. Human and cows' milk are both mixtures of fats, proteids, sugar, and salts in water.

	Fats	Pro- teids	Sugars	Salts	Water
Human milk	4%	11½%	7%	$\frac{1}{5}$ %	87+%
Cows' milk	4½%	31½%	4%	$\frac{3}{5}$ %	87+%

Human milk contains nearly twice as much sugar as cows' milk, practically the same amount of fats, and about one-third as much proteids, and only one-third the amount of salts.

One striking feature of the analysis of the milks of all animals is that they contain nearly 90 per cent water, impressing the necessity of dilution in food for the young. Fats are found in milk in the form of cream, used to maintain body heat and to promote the growth of bone. The proteids are the curds of milk. Their function is to sustain life and growth. Sugar exists as milk sugar. It produces body heat and stores up fat in the tissues. It was once thought that by modifying cows' milk so as to make the same chemical content as human milk, the problem of infant food would be solved, but this is far from true. Baby's digestion shows a decided difference between cows' fats and human fats, also in the proteids and even the sugar. Each of these elements must be considered as new substances as far as the particular baby is concerned, and adjusted to suit his digestive strength.

The first necessity is to obtain good milk. Always get the best available. Rich Jersey milk contains too much fats, frequently as much as 5 or 6 per cent, but this defect is easily remedied by removing the cream after it stands an hour, or possibly two, if over-rich, or, if delivered in bottles several hours after milking, when the cream has separated, pour off a portion of it. Herd milk is preferable to the milk of one cow, as it is less likely to vary with conditions affecting that one, though if it be a choice between old herd milk

and perfectly fresh one cow's milk, the preference should be given to the latter.

The Dairy The cows should be healthy and tested for tuberculosis. The milk barns and milkers should be clean and sanitary, and comparatively free from flies.

Care of Milk As soon as possible after being withdrawn, the milk should be put into sterile bottles and kept at a temperature of 50 degrees until delivered to the consumer's house; it should then be at once placed in the refrigerator. The best milk will rapidly deteriorate if allowed to stand on the doorstep in the hot sun for even a quarter of an hour. Many cities now superintend their milk supply, demanding tubercular tested cows, clean dairies and dairy barns, and a comparatively low bacterial count of 150,000 to 200,000 to the one-fourth of a teaspoonful, which means that the milk has been produced under good general conditions and carefully handled.

Certified Milk Certified milk is accessible in larger cities. It must have a bacterial count of not more than 10,000 to the one-fourth of a teaspoonful, which means that scrupulous cleanliness, approaching even surgical asepsis, has been observed in its preparation and that the dairy has been under the supervision of a milk commission.

Sterilizing Milk To sterilize milk it must be boiled at least three minutes. This kills the bacteria, coagulates a part of the proteid, and with it a little cream rises and forms a scum. The spores or eggs of some of the bacteria are not killed. Sterilized milk will keep even off of ice for twenty-four hours. It is free from living germs, and only spoils when these eggs or spores germi-

nate. Sterilized milk does not sour, as the acid-forming germs have been killed, but it rots, hence you cannot expect the sour taste in old sterilized milk. Sterilized milk coagulates in the stomach in smaller lumps than unboiled milk. It is constipating, and also lacks freshness.

Milk is pasteurized by holding it at a temperature of 140° to 150° for ten minutes. While this kills the germs as well as sterilizing does, it has the advantage of not forming the cream scum, and also of not completely removing the freshness. Boiling, however, is surer and safer. Commercial pasteurization is not reliable, as it is too often used as a method of marketing milk which otherwise would be sour from age.

**Pasteur-
izing Milk**

The Preparation of the Food

In the following directions, effort has been made to be as simple as possible. Every word has been carefully studied and the directions must be followed minutely.

Directions for Bottle Feeding

A separate bottle for each feeding. Cylindrical bottle with narrow neck, no corners, is best.

**Articles
Recom-
mended**

Wire rack for holding bottles upright.
Several nipples. Holes should be large enough to allow a feeding to be finished in ten or twenty minutes. When bottle is inverted milk should slowly drip. Holes may be enlarged with hot needle. Nipples should be kept in covered dish containing borax solution—heaping teaspoon to one-half pint of water.

Glass or enameled pitcher.

Glass funnel for filling bottles.

Pint glass graduate.

Long bottle brush.

Tablespoon, borax, and cotton.

Get best, freshest milk possible. Ask city health officer if your dairy is satisfactory for baby feeding. Put bottle on ice immediately upon its arrival. Prepare twenty-four-hour supply at one time, which includes the first feeding for the next day. Be systematic; it is easier, quicker, safer. Use unopened bottle of milk. Pour into pitcher to mix cream.

Milk

Milk, ...ounces.

Water, ...ounces.

Sugar, ...leveled tablespoons.

Boiled—Unboiled.

Feed.....ounces every.....hours, at.....A. M., ...P. M.

When boiling is ordered, bring required amount of water to boil in saucepan, add milk and boil actively for three minutes, stirring to prevent scum forming. Add sugar after removing from stove. Pour into clean feeding bottles. Stop with cotton. Put in bottle rack and set in cool water in summer or in open air in winter. As soon as cool, put on ice.

Boiling
Milk

Unboiled
Milk

If milk is not to be boiled, dissolve sugar in boiling water, cool, and add ice-cold milk; divide into bottles and put on ice.

Before feeding, heat bottle to blood heat by placing it in hot water. Test heat on bare forearm; never put nipple in your own mouth. Watch or hold baby during entire feeding time. This should be from ten to twenty minutes. If taken in shorter time, get nipple with smaller hole. If not all consumed in twenty minutes, throw remainder away and wait until next feeding time before giving more. Then use nipple with larger hole.

Feeding

Immediately after finishing feeding, wash bottle with

Care of Bottles and Nipples brush and washing powder, rinse thoroughly, fill full with borax water, and allow it to stand until next morning's feedings are prepared; then rinse bottle and drain while feedings are being made. This obviates the necessity for boiling bottles.

New nipples should be boiled one time before using. After each feeding they should be cleansed immediately with soap and water, rinsed, and kept in covered glass jar containing borax water, heaping teaspoon to half pint. Rinse off borax water before using.

Wide-mouthed bottles are good only for careless mothers. The large nipples are unsatisfactory and more expensive, and notwithstanding their breast shape, are not easily taken by young babies.

Food and water should be given warm. In summer, babies over six months of age may, if they prefer, take them cool, but never ice cold.

Note that the directions obviate the necessity for daily boiling of bottles and nipples. Boil them once, as they come from the shop. Put only clean food in them, wash them immediately after feeding, and fill with a mild antiseptic. If, as is too often done, the finished or half-finished bottle is carelessly set aside, the dry milk scum hardens, germs multiply rapidly, and the only way to clean such a bottle is to boil it.

The use of a separate bottle for each feeding is strongly urged, as in this way alone will the equal amount of cream be taken. If separate bottles for any reason are not practicable, keep the entire quantity in a large glass jar (have two of them and use on alternate days, boiling one daily). Before removing the food from the jar, mix the cream thoroughly with a sterile spoon.

Watch the baby through each feeding to see that the nipple does not collapse nor the bottle tilt over.

As in breast feeding, the interval best suited to the average baby is three hours, the feedings coming at 6, 9 A.M., 12 M., 3, 6, 9 P.M., and 2 A.M., up to four months; and after four months, or earlier if sleeping well, omit the 2 A.M. feeding. Wake for every other interval, but not for the midnight feeding, and when this is to be discontinued, do it by lessening the amount one ounce each night, finally giving only warm water. At eight months, the four-hour interval may be started, feeding at 6, 10 A.M., 2, 6 and 10 P.M. Better, keep the three-hour interval and discontinue the 10 P.M. feeding, giving five feedings, at 6, 9 A.M., 12 M., 3 and 6 P.M.

Water Artificially fed babies get so much water in their food that there is usually little need for giving extra water. On hot days, however, it is well to offer it frequently.

The rule is to give one or two ounces more than months of age. A hungry baby at birth—no months old—will take two ounces, while a weak one will be satisfied with one ounce. At four months, give five or six ounces, increasing the quantity gradually—that is, one-fourth ounce each week. Do not wait until he is a month older and then add the whole ounce. For instance, at four and one-fourth months, give him five and one-fourth ounces, or six and one-fourth ounces. The maximum quantity of fluid given at any age is eight ounces, rarely ten, never more. Too much fluid overdistends the stomach.

Strength of Milk Up to three months, whole milk diluted with equal parts of water is sufficiently strong; from three to six months, two-thirds whole milk and one-third water; from six to eight months, three-fourths whole milk and one-fourth water; after eight months, undiluted milk may be given, though during the summer three-

fourths is more satisfactory and safer, even up to the end of the first year or longer. In these directions, "whole milk" means no cream added and none removed.

The use of cream or top milk is not advised. Attempts to force babies to gain by the use of over-rich milk, in our climate, usually end in disaster. Efforts to correct constipation with cream are dangerous and usually unsuccessful.

Sugar is not a condiment, but a real food, to be used not haphazardly, but with great care, as in it there are possibilities of success or failure. The addition of sugar now completes the food. The choice of sugar with normal babies is a matter of personal preference. Most well babies will thrive on any form. Milk sugar, identical with that in human milk, would seem the natural selection, and is widely used in the East, but in our section gives no better results than cane sugar, which is cheaper, more accessible, and less likely to be adulterated, and for this reason is suggested in all ordinary cases. Malt sugar may be used, if while taking cane or milk sugar the baby fails to gain, even though apparently well. It is also indicated when the stools with other forms of sugar are whiter than normal. It may relieve constipation in normal babies. The quantity of sugar to be added to each twenty-four-hour food mixture is one ounce up to four months, and after four months, one and one-half ounces. As soon as starch in the form of bread and cereal is given, sugar may be gradually omitted. Two level tablespoons of cane sugar, three of milk sugar, or four of malt sugar make one ounce. Use it carefully, never judging by the taste.

The use of lime water is so common that some mention must be made of it. I am convinced that it is but a habit,

**Lime
Water**

perhaps doing no harm, but at any rate unnecessary in the average case. Milk supplies at least four times the quantity of lime required for bone formation, hence to simplify, let's leave it out. Its action is to retard the curdling of milk in the stomach. It is indicated only when vomiting is a prominent feature, and then it must be added to the extent of one-fourth or one-half the feeding.

Example—To make the food for a strong five-months baby: He should have six feedings at three-hour intervals, and the quantity at a feeding should be his age in months plus two; that is, seven ounces—this makes forty-two ounces in the whole twenty-four-hour mixture. The strength should be two-thirds whole milk, one-third water; the sugar should be one and one-half ounces. Take twenty-eight ounces of milk, fourteen ounces of water, and three level tablespoons of cane sugar, divide into six bottles and give at 6, 9 A.M., 12 M., 3, 6 and 9 P.M.

Examples

To make the food for a frail two-and-one-half-months-old baby: He should have seven feedings of three and one-half ounces each—his age in months plus one. The twenty-four-hour quantity is twenty-four and one-half ounces, which must be half-strength milk with one ounce of added sugar.

Milk, twelve and one-fourth ounces.

Water, twelve and one-fourth ounces.

Cane sugar, two level tablespoons.

Mix and boil and divide into seven feedings.

The caloric values of the given formulæ have been carefully studied and fulfill all requirements. While possibly the fat content is a little low in the early months, it is safer to use a diminished amount of cream for young babies.

**Food
Values**

Boiling
Milk

Boiled milk is safer. It forms softer, smaller curds, is more digestible, prevents tubercular, typhoid, or other infections. It is more easily preserved. After May 1st, milk for all babies must be boiled. Its only faults are its constipating tendency and lack of freshness, and these are easily corrected by a few drops of milk of magnesia and orange juice.

Starting a Baby on Artificial Feeding

In mixed feeding, when only one artificial feeding daily is required, the full strength food may be begun at once, but if weaning is sudden, the child must be gradually accustomed to his new food, using half the prescribed strength, with some of the cream removed and no sugar added. The milk should always be boiled.

To suddenly wean a five-months baby, allow the milk to stand one hour and take off the cream then risen.

Example Take fourteen ounces of this milk, twenty-eight ounces of water, boil, and add no sugar. This makes six feedings of seven ounces each. The third day, add one level tablespoon of cane sugar, and daily increase two ounces of milk and decrease two ounces of water in twenty-four-hour mixture. In three or four days, if all goes well, add one more level tablespoon of sugar, and in nine days he will be using twenty-eight ounces of not rich milk, fourteen of water, with two level tablespoons of sugar; one more tablespoon of sugar is now added, and then the cream gradually left on, thus reaching the required strength for this age. Continue boiling if it happens to be summer. If the food is refused on account of the lack of sweetness, use saccharine tablets, which take the place of sugar as a sweetening, but do not cause fermentation. Obviously, with such weak rations, the required weekly gain will not be made,

and possibly the baby will be hungry, but it is not safe to try to satisfy with a food which has not yet been adjusted. The stools should be carefully watched for signs of indigestion.

It is a desperately hard task to feed a new-born baby, but fortunately rarely necessary, as there is usually enough breast milk to begin with. From the preceding description of the process with an older baby, it is seen that each element of food is to be tried as nearly as possible separately, starting with a weak boiled milk with the full amount of proteid, no added sugar, and little fat.

Starting a
New-born
Baby on
Artificial
Food

During the period of experimenting, loss of weight is inevitable. If the new-born baby is small or frail, he will not be able to survive further depression. Under such circumstances, do not risk artificial feeding, but give at once human milk until his digestion is strong enough to undertake the adjustment of cows' milk, which process is even slower and more hazardous than with older babies. If, however, he appears sufficiently strong after twenty-four hours on plain water, giving one ounce every two hours, begin with one-fourth strength boiled skimmed milk, no sugar, making up ten feedings for the twenty-four hours. Give two ounces every two hours during the day, with one feeding after 10 P.M. Prepare five ounces of milk and fifteen of water. Then add one-half ounce of skimmed milk and decrease one-half ounce of water daily or every other day until half-strength milk is reached. Sugar is to be added gradually until you reach the allotted one ounce in twenty-four hours' supply, and the cream gradually increased until full milk is used; then go to the three-hour interval, with, of course, seven feedings in the twenty-four hours. The whole process will take from two to four weeks, during which time the

weight, stools, and temperature must be carefully watched.

Successful Artificial Feeding If the feeding is progressing properly, baby should gain at least one-fourth of a pound weekly, should sleep well day and night, and have normal stools and normal appetite.

For emphasis it must be repeated that the above methods are simply working rules and that most normal babies will digest the given mixtures if gradually adjusted, and if the amounts stated are reached, the child will be thoroughly nourished and with a balanced ration.

Many babies refuse to conform to rules,—making each feeding case individual.

An excess of fats or sugar or proteids does not signify more than four per cent fats or more than the specified amount of added sugar, but it means that the baby is getting more than he can thoroughly digest, as shown by the before mentioned symptoms. Hence the necessity of small beginnings in experimenting with artificial feeding. Some babies throughout the first year are unable to take whole milk and some cream must be removed; others may be unable to digest any added sugar. Each may have an idiosyncrasy.

Unsuccessful Artificial Feeding Unsuccessful feeding is a condition which should have the attention of the best available specialist in baby feeding. The natural tendency of such disorders is from bad to worse. It is not likely to be corrected unless a radical change is made.

Symptoms Indicating Disturbed Nutrition Failure to gain (don't wait for a loss); poor sleep; irregular appetite; chronic vomiting or spitting up, or abnormal stools show that the feeding is not successful. Stools show the progress more satisfactorily than any other indication. They represent the reaction of food to the digestive process. Thus

only can the strength of digestion be observed. The mother should be able to detect the slightest deviation from normal.

In cows' milk feeding, the stools are lighter, rather a lemon than an orange color, and are more consistent than in breast-feeding; rather mushy, possibly slightly formed; in number, one to three daily. If cereal water or malt sugar is used in the preparation of food, they are oak brown.

Excess of Sugar Too much sugar produces green, acid, chafing stools, accompanied by a great deal of gas. Normal stools may turn green after standing, but this is not significant.

Excess of Fats Too much fat causes either soft, bean-shaped curds in loose, frequent stools, or putty-like, dry, whitish stools, with a tendency to constipation. The whitish tendency is a danger signal.

Excess of Proteids Too much proteid shows in large, hard, white curds, probably too many stools, associated with colic.

Blood and mucus in stools call for medical attention. Severe constipation with hard lumps may cause a little mucus, possibly a streak of blood. This is not serious, but the consistency must be changed. (See Constipation, page 77.)

Drugs Some drugs affect the color. Bismuth and iron cause blackish stools; castoria, a dark brown; milk of magnesia produces a watery stool.

When other foods than milk are given, the color is more variable. Grape juice, spinach and other green vegetables may cause blackish stools; meats, meat broths and eggs cause darker stools with a foul odor, especially if they are in excess. Bread and cereals produce a brown color.

Other Foods Than Cow's Milk During the First Year

Milk is the baby's living the first year; he requires nothing else, and is liable to be injured rather than helped by premature additions to the diet.

Goats' milk has the same characteristics and about the same formula as cows' milk. It can be had fresh, as the animal may be kept on the premises, and frequently agrees when impure cows' milk fails.

**Goats'
Milk**

Mares' milk (or asses' milk) is more digestible than cows' milk, but is difficult to obtain.

**Mares'
Milk**

When the first year is mentioned, naturally the average baby is referred to, not an abnormally precocious nor an abnormally retarded one. Personally, the author regards the teeth as a better standard of digestive strength than age. At one year, there should be four upper incisors and two or four lower incisors, and this rather than a birthday should indicate the time to begin solid foods. It would be less hazardous and more beneficial, for instance, to start a one-year diet with an eight-months baby with six teeth than with a fifteen-months baby with only two teeth, not an unusual condition. While scientifically proved that starch may be digested even by a new-born baby, yet it should not enter into his dietary in the form of bread and cereals in appreciable quantities until he has six or eight teeth.

**Progress of
Teeth as
Indication
for Food**

The following articles of food are sometimes indicated under one year. Strictly speaking, they are not foods, but are intended for some special purpose:

Strained orange juice. This should be given regularly to babies fed on boiled or pasteurized milk or canned or dried food. It supplies freshness not otherwise obtainable. It may be begun as early as three months, given half way between feedings in increas-

**Fruit
Juice**

ing quantities, one to six tablespoons daily, depending upon the condition of stools. Even when fresh milk is taken, fruit-juice is beneficial. The orange is always to be preferred, but if not obtainable, the juice of fresh grapes or a reliable brand of preserved grape juice diluted half and half may be used. Weak lemonade is satisfactory with older babies. The quantity given must be governed by the condition of the stools.

**Cereal
Water**

Cereal water (barley, rice, or oatmeal water) may be used instead of plain water in making milk mixtures. Its food value is slight, almost negligible, but it makes the mixture more palatable, assists in reducing the size of the milk curd, and may correct constipation by decreasing the firm texture of the stool.

**Beef
Juice**

Beef juice may be given in small amounts to anæmic babies after the sixth month. Its food value is but slight, but it acts more as a tonic, supplying the salts of iron. One to three tablespoons may be given with one feeding. Gravy is never so satisfactory as beef juice. It is often indigestible, containing too much cooked fats and seasoning.

Breads

After ten months, a toasted cracker, not sweetened, or toasted bread may be given for ten minutes before or after a nursing or feeding. The baby chews and sucks on it and seems to enjoy it, and sometimes thrives upon it. There is no worse habit than constantly sucking a cracker or bread, hence limit the time he is allowed to have it rather than the amount. Watch him carefully while taking the bread to prevent choking. Beef juice may be given on the crumbs.

Patent Foods

It is difficult to discuss patent foods impassionately, so much is the harm done by their indiscriminate use. Many

**Patent
Foods**

babies are forced to rely upon these foods simply because those to whom their welfare is entrusted have never made a study of infant feeding, finding it easier to follow the printed directions on the container.

There are two kinds of patent foods: The complete (requiring only the addition of water), all varieties of which contain dry or boiled-down milk in some form; and the incomplete, which are to be mixed with cows' milk. The patent part of both kinds is the added sugar or starch, sometimes a drug in addition. They all go to the cow for their cream and proteid, either in the form of concentrated or fresh milk.

**Complete
Patent
Foods**

Complete foods are those requiring only the addition of water. Concentrated milk in some form is the basis. As the cream is not easily preserved, skimmed milk must be used in their manufacture, so all are deficient in fat. Sugar or starch or both are added to this milk basis to make the food. They all contain an excess of sugar, with but little fats. They rely for their success on the fact that some babies (about half of them) can successfully take an excess of sugar, and make fluffy, fine looking specimens, though they are not healthy and offer little resistance to disease. Holt has stated that he has never seen a baby fed one year on such foods without rickets or scurvy, one or both. This is corroborated by my experience, though babies do not often wait a year to show symptoms.

**Condensed
Milk**

Sweetened condensed milk is an example of this form, though strictly speaking not a patent, being made by many manufacturers. Every teaspoon contains about three-fifths of a teaspoon of sugar. If a child happens to be one who can digest the excess of sugar and make it answer for fat, he grows in weight; if not, he soon shows one or more symptoms of sugar

indigestion: flatulency, loss of appetite, vomiting, chafing diarrhœa.

If complete patent foods disagree, sugar must be the offending ingredient, so it is senseless to change from one form of these foods to another, as all have the same high sugar content, varying only in the character of sugar or starch. If one kind of sugar disagrees, other forms will also.

Complete foods are often successful in starting a baby when only a small quantity is used—a teaspoon or so—but when increased to satisfy the increasing appetite, they usually cause symptoms of sugar intolerance.

These are sugars with or without starch, and occasionally a drug or some inert substance as egg albumen mixed. The real nourishment comes from the protein and fat in the cows' milk added. Some of them are good sugars, probably the best on the market, but are sold under patent names at greatly increased prices. The directions with all forms of patent foods advise the use of excessive quantities. Few babies can digest so much sugar.

Two forms of milk not in such general use should be mentioned: dry milk and evaporated milk. The first is skimmed milk, evaporated to a dry powder by a special process. There is no added sugar and it is quite satisfactory for temporary use when fresh milk is unobtainable or unreliable. One level tablespoon of dry milk to one ounce of water makes one ounce of skimmed milk. It needs no cooking, no refrigeration, and sugar may or may not be added, as the case requires. Evaporated milk or unsweetened condensed milk is a thick liquid made by boiling down milk to one-half or one-third its original volume, with no added sugar. It can be converted into a weak milk by

replacing the water boiled out; that is, by adding twice the quantity of water. It is far superior to sweetened condensed milk as a baby food, though it is not so easily preserved. When opened, it should be poured into a sterile glass jar and kept on ice not longer than one day, whereas with the same precautions condensed milk may be used five days. Evaporated milk is sold in very small cans and one will hardly last a day.

Advantages and Disadvantages of Patent Foods

The bad points in patent foods are the deficiency of fats, the excess of sugar, and the lack of freshness. They do not furnish a balanced ration. Even apparently well nourished babies show a lack of resistance to disease and defective bone formation. These foods have their good points also: as a rule they are sterile, are better than bad milk and are safer with ignorant or very poor mothers who do not understand the importance of clean milk or who cannot afford ice. For traveling babies, they are better than indiscriminate dining car or hotel milk. In mixed feeding sometimes a patent food is advisable on account of its convenience and slight tax upon the mother's time. Of course, it is not so nutritious as cows' milk, but if five-sixths or six-sevenths of the baby's food is good breast milk, but little harm comes from the diminished nutrition in using one feeding of preserved milk.

Changes in Milk in Summer

In late spring or early summer, coincident with the clover pastures' growth, cows' milk becomes unreliable. Babies get sick and have digestive disorders in spite of unquestionable milk supply. The reason for this has never been fully explained. It is the beginning of the hot weather, with its attendant digestive depression. Many of the cows are sick with diarrhœa; frequently they die of clover bloat. The prevalence of feeding disorders and bowel troubles in babies under

these circumstances may be due to the transmission of the diarrhœa germ from the cow to the milk or to faulty milk secretion by the sick cow, or possibly to the transmission through the milk of some purgative principle taken in the food.

Uncertain as to the cause, we can only suggest relief. Boiling the milk may modify this tendency to disagree, so begin May 15th to boil milk. Feeding cows on dry food or short pastures is a surer plan, but rarely feasible. During the first few weeks of this susceptible season, until pastures are mature, it is not a bad plan to use some of the preserved milks, such as dry or evaporated milk, thus obviating these changes. The preserved milk may be diluted to equal ordinary milk and used in completing the food formulæ. Such feeding necessarily will be low in fats, but at this season of the year it is safer to feed a low fat, as babies need less in hot weather.

CHAPTER III.

FEEDING AFTER THE FIRST YEAR

Feeding in the Second Year

Up to the end of the first year, milk supplies all the average baby needs and in a balanced ration, lacking only the salts of iron; and to make up for this deficiency, a surplus of iron sufficient for the first year is stored in the system at birth. After one year, if he gets nothing but milk, anæmia and undernourishment are the natural result; it is, therefore, necessary at one year for the average child, no matter how thriving, to have other foods than milk, though it should form a part of his diet for two, preferably five, years.

Enough food calories may be given with perfect safety without milk, but it is too concentrated, and babies under two years, often under five, fed without milk, have periodic digestive disorders, so-called bilious spells, because too little fluid is taken. Few children know how to drink enough water. They take it often, but only a sip at a time, the total quantity possibly being only two glasses a day. A one-year-old gets forty ounces (five glasses), or more, of milk, which is nine-tenths water, and when milk is discontinued, his fluid requirements are seriously endangered. He needs milk as a diluent of the solid food if not as a nutrient. The first solids are often enticing, and there is a tendency to stop liquids and take solids. Guard against this error. He may take the solids in addition to the milk, but not in place of it.

At one year a child should be taught to take milk from a cup instead of a bottle, but do not change if it tends to

Weaning from the Bottle make him neglect milk. Weaning may be accomplished by filling a small cup from his bottle and coaxing him to take it thus, and gradually increasing the amount so given. The bedtime bottle may be retained another year if it helps him to go to sleep. At some meals cocoa or postum may be used to flavor milk, but this is rarely necessary.

On the other hand, some few children refuse solids. Having been previously so often warned against them, it may require some tact to persuade them to eat.

All new foods are experiments and should be tried carefully and gradually. Never add two new things to the dietary the same day.

Most authorities advise the four-hour interval, beginning at eight months, giving five feedings, at 6 and 10 A.M., 2, 6 and 10 P.M., up to the end of the first year, when the last feeding is omitted, leaving only four meals. Now, each baby is a rule unto himself, and he tends rather to overeat than to starve.

Number of Meals During Second Year

Three meals daily may suit some children, five meals others, and four others. Study the child. If fed too often, the appetite will fail; if not often enough, he will be too hungry, and eat too rapidly and too much at meal time. If a late riser, breakfasting at 8, there is little opportunity for more than four meals. There is no harm in making the interval four hours between some meals and three hours between others. In the average case, contrary to most authorities, I recommend five meals daily, with the three-hour interval. It suits most babies just as well if not better than the longer interval. The mid-morning and mid-afternoon lunches are made lighter than the other three meals, yet they keep the appetite from being too ravenous, especially for supper, when overeating

would make him sleep badly. The five-meal system is certainly more convenient to the mother, as it throws the three large meals with hers, so that there is no need for extra preparation, coming at 7 and 10 A.M., and 1, 4 and 7 P.M.

Breads The first addition is bread. Any well-done or stale bread, preferably toasted to insure its being thoroughly cooked, agrees with babies. Nothing is worse than a mass of underdone starch. Bread may be taken dry or crumbled in milk. Beware of sweetened breads, such as sweet zwiebach or graham crackers; they are cakes. Bread may be given for ten minutes before or for ten minutes after the milk. Do not allow baby to form the pernicious habit of continually sucking a cracker, hence the time limit instead of the quantity specification. The bread should be crisp enough to break into crumbs in the process of biting with the few teeth, or should be stale or toasted, so as to retain its porous structure, permeable to the digestive juices after swallowing. Until accustomed to taking bread, watch him to prevent choking.

Cereals Cereals are next to be tried. Thoroughly cooked cereals only are permissible in the first and second years. Rice, grits, strained oatmeal, or cream of wheat, cooked at least two hours, may be used. Always give the cereal salted, not sugared. Put baby's milk, not cream, over it. The benefit derived from cereals is much overestimated. They are starches, and to insure proper digestion should be thoroughly masticated in order to mix them with the saliva, which is rarely done; and they are too often loaded down with sugar. Do not concentrate on cereals, even with older children. Uncooked cereals are questionable, certainly not permissible in the second year, though cornflakes or shredded

wheat biscuit are preferable to the undercooked cereals procurable in hotels and dining cars.

Meats Crisp breakfast bacon powdered and mixed with bread crumbs is valuable as an appetizer, and for the salts it contains. It rarely fails to agree. Beef juice is a good tonic, and contains mineral salts, but gives little nourishment. Scraped steak may be given in the second year in cool weather. It is six times as nutritious as the same amount of beef juice, and almost as easily digested. Tender chicken, roast beef, or mutton cut fine may be given after the age of eighteen months. Fish, if known to be fresh, may be given at the same age. Pork should not be allowed before the sixth year.

Eggs The digestibility of an egg is always an individual proposition and must be experimented with carefully in every case. When it agrees, it is a valuable food. The white alone is so low in food value that it forms no part of a well baby's diet. Coddling is the best way to prepare it. If this is distasteful, try the yolk of an egg, boiled twenty minutes (through the pasty into the mealy stage), mash with butter and spread on bread.

Vegetables Vegetables are not permissible in the summer dietary of Southern babies under three years, and must be given with great care even then. Potatoes in the summer are liable to be too old and sprouty, or too immature and gummy. If mealy when baked, they are satisfactory. Baked sweet potatoes are equally as digestible as Irish potatoes.

Vegetable Soup The food value of most other vegetables lies chiefly in their salts, especially iron, which makes the coloring matter, and in this form it is most easily assimilated. Doctors Courtney and Fales have demonstrated by elaborate experiments that half of these

mineral salts are lost if vegetables are cooked in water. The proper way to cook a vegetable to get the full mineral salt value is to steam it over, but not in, water. This teaches that while we cannot give babies vegetables in the summer, we can get half their salts value with no risk, by giving their extracts in the form of strained vegetable soup, made with a chicken, beef, or mutton base. Rice or barley may be added to this soup. The food value of clear broth is surprisingly small, and it does not in any way take the place of milk; even the strained soup must be given only once a day, as it deprives the baby of the much more nourishing milk. Vegetables may be given in winter in the second year.

Butter Butter may be used on bread or cereals. Sometimes babies are able to take it even when in their early months they were unable to take milk without the removal of some of the cream. The quantity given must be dependent upon the bowel condition. An excess will cause diarrhœa.

Sweets Keep away from sweets as long as possible. When starch in the form of bread, cereal, and potatoes is used, there is no real need for sweets, and sugar should be gradually omitted in milk mixtures. Babies have a natural tendency to overindulge, and the longer they are kept in ignorance of the taste, the better. At any rate, withhold them until the third year.

Starting a New Diet In adjusting the diet, remember always that every new thing is an experiment, to be tried out singly; second, that it is intended for a well child, and the moment he is sick, stop everything, milk included; give only water or barley water, until you have further advice. The child is unlike the adult in this respect: acute illness, intestinal or otherwise, stops digestion, and all foods given in a disordered state tend to fer-

ment rather than digest. You should not guess at the article causing the illness, discontinue it, and proceed as usual, but stop everything and allow the digestive apparatus to readjust itself, and then cautiously proceed on the diet list.

**Diet
Lists**

When milk is mentioned in the subsequent lists, it means six or eight ounces of the milk mixture which has been previously successfully taken. If it is taken readily give it after the solids; if the baby will not take it then, give at least six ounces first, then the solids.

If any article of food appears especially distasteful, do not force it; let the baby rest and try the food again after a few days. In this way the baby is gradually trained to take almost any food. In these lists, five meals a day are given. They can easily be adjusted to four or even to three, to suit the individual child.

Summer Diet

From Twelve to Eighteen Months

7 o'clock—Milk; one coddled egg, or two tablespoons of steak juice; one piece of toasted bread and butter.

10 o'clock—Milk; one toasted cracker, one slice of broiled bacon, powdered.

1 o'clock—Milk or eight ounces of strained soup; two tablespoons of rice; one piece of toasted bread, or corn-bread and fruit juice. (See page 55.)

4 o'clock—Milk; one piece zwiebach.

7 o'clock—Milk; two tablespoons cooked cereal, salted, not sweetened.

From Eighteen to Twenty-four Months

7 o'clock—Milk; coddled egg or one slice of broiled bacon, powdered; two tablespoons of cereal, salted; bread and butter.

10 o'clock—Milk or fruit juice and zwiebach.

1 o'clock—Milk or eight ounces strained soup; scraped steak pâté as large as a tablespoon; one tablespoon of rice; one slice of toasted bread or cornbread and butter.

4 o'clock—Milk and a toasted cracker.

7 o'clock—Milk; three tablespoons cereal, salted; bread and butter.

Winter Diet

From Twelve to Eighteen Months

7 o'clock—Milk; coddled egg or breakfast bacon; toasted bread and butter.

10 o'clock—Milk and one piece of zwiebach.

1 o'clock—Milk or eight ounces strained soup; pâté of scraped steak; one tablespoon of carrots or spinach, pressed through a colander, or a small potato, baked; cornbread and fruit juice.

4 o'clock—Milk and one piece of zwiebach.

7 o'clock—Milk and two tablespoons of cooked cereal, salted.

From Eighteen to Twenty-four Months

The same as for the summer diets for the corresponding age, except for a more extended list of vegetables at midday. Vegetables should be pushed through a colander if necessary, and always give one green and one dry vegetable. For the green, select either spinach, asparagus, turnip greens, squash, carrots, boiled onions, baked apple with little or no sugar, or apple sauce; and for the dry vegetable, Irish or sweet potato baked, dry beans or peas pushed through a colander, rice, grits, hominy, and macaroni or spaghetti cooked in the family dish with cheese—but leave the cheese off of the part served the baby.

It may be repeated that these are simply suggestions

and may be varied to suit the convenience; also that when the appetite does not seem to justify the frequency, four meals or even three meals may be adjusted from this.

General Suggestions

**Failing
Appetite**

When the appetite fails, there is no reason to change the food or give tonics; normal babies do not tire of good food; only adults object to sameness. It is usually due to overfeeding. Restrict him to liquid diet—milk, strained broth, and orange juice—for a day or so and rest the digestion. Do not try to correct it by changing to other, probably more indigestible foods. If they won't eat what is good for them, do not give them what is bad for them just to tempt the appetite.

Feeding in Third Year

**Number
of Meals**

Three meals daily at your regular meal times should be sufficient, but most children demand something between meals. This means a regular (and let it be regular) lunch, between breakfast and dinner and dinner and supper, which reverts to the old five-meal system, or the three-hour schedule begun at birth. It may be too much for some, but it is hard to satisfy the majority without it. These lunches should be at least part liquid, say a glass of milk and a cracker, or lemonade and zwiebach, or buttermilk and toast. If the lunch seems to impair the appetite for the next meal, make it purely liquid, and if still not hungry at meal time, omit it altogether.

**Milk After
Second
Year**

Milk should be continued throughout the year; in fact, the longer it is taken, the better. The taste for buttermilk is acquired, but is a very healthy one and worth cultivating. If for any reason milk must be discontinued, it must be seen that the baby gets

plenty of water to make up fluid requirements, and this is often difficult.

Sweets If sweets have been kept from him to the end of the second year, one should be satisfied, though the longer they are forbidden, the better. At this time it is saner and safer to compromise. Sweets are chiefly harmful because indiscriminately given. Even if you do not give them yourself, some well-meaning but ignorant friend will slip him a piece of candy between meals, and the habit is soon established. Taken at this time the candy ferments and produces a full feeling and he has no appetite for the next meal. It makes his mouth over-acid, and promotes decay of the teeth. Sweet drinks are just as pernicious as candy.

Desserts To properly meet the desire for sweets, make it a rule in the third year to begin giving a simple dessert, such as gelatine, boiled custard, rice, bread or tapioca pudding, fruit jelly, or a small cooky after his midday meal, as a reward for taking a good meal, not in place of it. If he has to have candy, give it then and then only. He is so full he will not take much. Ice cream is only as good as the milk that it is made from. One should know its origin before using it for young children, and it should be given only after a meal.

Chewing Another common defect in the third year is the lack of chewing. A baby should be taught to chew. Give him hard food that needs chewing, but do not rely on his chewing. See that food is ground or pushed through a colander. Do not let him swallow lumps of food.

Fruits or vegetables with husks or seed are not permissible until five years of age or later. Berries are especially dangerous. The longer he is taught to regard berries as ornamental, not edible, the better off he is.

The feeding after the second year may be summed up under the four rules:

1. Regular meals, whether three or five a day.
2. Sweets only after a good meal as a reward for eating a good meal, and not in place of it. This applies to desserts, syrup, and preserves as well as candy, ice cream, etc.
3. See that everything is finely cut or chopped, but teach him to chew.
4. No food with a husk or seed should be given.

It is best not to let children eat with adults. They cannot help seeing and craving indigestible things. Beware of giving tastes of food. It only creates new desires that make life harder.

Sample Diet for Third Year

7 o'clock—Milk, which may be flavored with cocoa or postum; bacon or egg (may now give an egg prepared any way except fried); a saucer of cereals, salted; bread and butter.

10 o'clock—Fruit juice; zwiebach.

1 o'clock—Milk or soup; ground or scraped beef, chicken or mutton; one green and one dry vegetable; cornbread; rice pudding, without raisins.

4 o'clock—Milk and cracker.

7 o'clock—Milk; cereal, spoon bread (see recipe); bread and butter.

Canned
Vegetables

Canned fruits and vegetables should be avoided if possible. There is always a slight element of danger in them—much less now than formerly. This is true even for adults, but food poisonings are much more serious in children. Before using, canned stuff should be brought to the boiling point to sterilize.

The Care of the Mouth and Teeth

While the subject of the mouth and teeth may appear out of place in the chapter on feeding, yet, on account of the great importance of the proper diet in the formation of healthy teeth, it is deemed appropriate to discuss the matter here.

As before mentioned, it is not necessary or advisable to regularly wash a baby's mouth before teeth appear.

Clean- liness

See that nothing dirty is put into it, then there is no need to wash it, and even harm is done by abrading the tender mucous membrane. As soon as solid food is given, wash down the crumbs, etc., with a little water after a meal and wipe his teeth with cotton or a soft cloth. When he has sixteen teeth, use a soft brush regularly. Cleanliness is preferred to antiseptics. Great care should be taken with the temporary teeth, and should decay develop, attend to it at once.

Effect of Diet on the Teeth

The growth of strong teeth depends upon giving a baby a balanced diet. Condensed-milk-fed babies usually have chalky or soft teeth, which decay readily. Illness or poor nourishment causes defective formation of the teeth at that period. Too much and indiscriminate sweets, by causing over-acidity of the mouth, tend to produce early dental decay.

If the second teeth seem to come in irregularly or crowded, suspect the presence of adenoids.

Since a large percentage of rheumatism, heart disease, and kidney infections have been traced to septic mouth conditions, one should be more careful in tooth preservation. Strong, healthy teeth depend upon (1) a balanced ration in infancy; (2) a healthy, well dieted childhood, with proper exercise in chewing; (3) cleanliness of the mouth, with early correction of defects. It is rare that

the permanent teeth are strong, with the temporary set decaying and abscessed. The only one of these three suggestions feasible in after life to improve bad teeth is cleanliness (unfortunately we cannot turn the tide of time backward), hence it is so strenuously urged, though in the prevention of bad teeth it is the least important of the three.

If a tooth is dead and abscessed, as shown by repeated gum boils, it should be extracted at once, regardless of the fact that it may cause irregular position of the permanent teeth.

CHAPTER IV.

THE TRAVELING BABY

The necessity for traveling with a baby is unfortunate. If on a long trip, cows' milk is unsafe, unless boiled for fifteen minutes before starting and kept constantly on ice, necessitating a refrigerator. Arrangements must be made in advance for the delivery of suitable milk for the next day's feeding. Hotel and dining car milk is not safe even for older children. These necessary precautions are troublesome, and sometimes impossible.

There is less harm than is usually supposed in changing cows' milk; the only difference in the average herd milk in various sections is that one may be richer than the other. To obviate this possible objection, it is safer to remove some of the cream from the new supply for a few days. This weakened food will probably be better suited to the baby tired from the trip and excited by his new surroundings.

When traveling, it is safer and simpler to change to dry milk which requires no cooking, nor refrigeration, and can safely be used after arrival until satisfactory arrangements can be made for obtaining good cows' milk. Two or three days before starting, try several feedings of the dry milk to get him accustomed to it.

If habitually changing location, the mother is rarely able to retain a sufficient supply of good breast milk, and early resorts to mixed feeding, probably full artificial feeding. Good cows' milk is difficult to obtain and necessitates so much equipment in preparation and preserva-

tion that it is not practical. It is better to use dry milk, now accessible in all cities. One level tablespoon, mixed with one ounce of boiled water, makes the equivalent of one ounce of cows' milk, from which some fat, not all, has been removed. Use this on the trip, just the same strength as recommended for cows' milk; of course, each bottle must be made up immediately before feeding. When dry foods are mixed with water, they become as perishable as cows' milk, and require icing. Under three months, use one-half as many leveled off tablespoons as ounces in the quantity of feeding; from three to six months, two-thirds as many tablespoons; and from six to eight months, three-fourths as many; while after eight months, use one level tablespoon to each ounce of water. This makes one-half-, two-thirds-, three-fourths-, or full-strength milk. There is no necessity for adding sugar, though if the baby is constipated or the weekly gain is insufficient, it may be cautiously given, according to the proportions recommended in cows' milk feeding. (See page 49.)

When temporarily settled for several days, and cows' milk is dependable, one ounce of boiled milk may be added to each feeding and one tablespoon of dry milk withdrawn. The second day, use two ounces of milk and two tablespoons less of dry milk, and so on until the dry milk is replaced by cows' milk; then put him back on dry milk when he has to travel again.

Be careful about the water supply. Boil enough to last until you are settled again. Special attention must be given to cleansing bottles and nipples. Keep the nipples in a flyproof receptacle. Always have an extra supply. A small heater using solidified alcohol is a great convenience. Thermos bottles are difficult to cleanse and must not be used to keep milk or

prepared milk foods. They are convenient, however, for hot water.

Young children may be taken suddenly ill while on the trip. The first direction in any illness is to stop milk and feed on barley water. Now this is difficult to prepare while traveling. Cracker tea is a good substitute. (See recipe.) Always carry toasted crackers or bread with you for this emergency.

Traveling With Older Children

Do not trust station or dining-car milk until at least five years of age. Use dry milk as suggested for babies. When other foods than milk are given, as much as possible should be taken from home. Fresh eggs are easily carried and cooked on an alcohol stove. Broiled breakfast bacon may be reheated. Zwiebach or toasted graham crackers with his own milk over it make a good cereal, much better than can be ordered from a dining car. Shredded wheat biscuit and cornflakes are permissible for older children. Two-minute oatmeal (previously cooked three hours at the factory) is reliable. These, with baked potato, baked apple, procurable at hotels, etc., and fruit juices will suffice for quite a long journey.

Do not expose a baby to coughing and sneezing fellow-passengers. Avoid drafts and overheated, close cars or rooms. Dress him to suit the immediate temperature, but be prepared for any change. See that he gets as much undisturbed sleep as possible. For convenience, when traveling, rubber napkins or breeches are permissible, though not under any other circumstances. They keep the urine in close contact with the skin, make him too hot, and promote chafing. Be especially careful to prevent mosquito bites.

CHAPTER V.

COMMON DISORDERS USUALLY CAUSED BY IMPROPER FOOD

Chronic Vomiting

This may be due to many causes, the determination of which often requires the combined observation of both mother and physician for many days. We will mention some of them:

Chronic
Vomiting

1. Too tight clothing or bands.
2. Too rapid feeding and nursing.
3. Nursing or feeding too much.
4. Nursing or feeding too often.
5. Disturbing too soon after his feeding.
6. Constipation with flatulency.
7. Too much fat in the food. (Try skimmed milk and add lime water, 25 per cent of the quantity of each feeding.)
8. Too much sugar. (Remove all the sugar and sweeten with saccharine, if necessary. This is a frequent cause of vomiting if using patent foods.)
9. Too much proteid. (Boil the milk and further dilute it.)
10. Acute infections are frequently ushered in by vomiting.
11. Malformations of the digestive tract.
12. The gas bubble. All babies swallow air to some extent; and in others, gas develops as a product of fermentation in the stomach if improper food is given. The air or gas accumulates, and as soon as it gets warm it

expands, and up it comes, pushing the food before it. If food is fermenting, correct it; if he has simply swallowed air, just after feeding lay the baby on his right side, with head a little high. The bubble of air then comes up to the œsophageal, or swallow, end of the stomach, and sooner or later it is expelled by belching without losing his food.

Constipation

During the first year, a baby should have one to four stools a day; one is enough, four not too many. At six weeks, training should be begun by holding him out on the lap and touching or inserting into the rectum a small glass rod, such as a thermometer, or a trimmed piece of soap, or a syringe tip. At the same time, touch a small chamber to the buttocks. He will be taught to strain and have an action. This is a great advantage in watching the stools, and a saving in the laundry bill. This should be done regularly, preferably before his morning bath and at bedtime. After a week, it will only be necessary to touch the buttocks with the chamber to produce the straining.

When old enough to sit up, use the nursery chair, taking care to reserve its significance for this special occasion, and for a limited time, not over ten minutes; never allow it to be used simply as a seat or for punishment, as is often done.

If he is gaining, and is sleeping well and happy, constipation is insignificant, though it worries the mother immensely. It may be due to an inactive lower bowel (he does not understand how to control it) or to too complete digestion of milk, not enough residue; or to starvation, though this is associated with a failure to gain. Possibly rectal diseases or malformation may explain it.

Training should be begun at once, no matter how discouraging. It is a good life habit to establish. Precede the training by a gentle rotary massage for five

Treatment minutes over the abdomen with the finger tips, or with a billiard ball, following the course of the large bowel; that is, beginning at the lower right corner and rolling around over the navel from right to left. Do not massage too soon after eating. Purgatives (that is, strong purgatives, not laxatives) should never be used for simple constipation. Their cleansing is so thorough that it intensifies, never cures.

Do not attempt to correct constipation with food in the summer time. It is dangerous. If you give too much, you may start an uncontrollable diarrhœa. Drugs are safer. If too much magnesia is given, a few drops of paregoric will correct the results and no harm is done. Too much butter, orange juice, or scraped apple may cause an uncontrollable diarrhœa which paregoric only aggravates.

The following measures are recommended for the control of constipation:

1. Strained orange juice is often quite effective. One tablespoon half way between meals and increased until you get effects; as much as four ounces may be given. It may be given as early as three months. It is always harmless, and a possible colic is the only chance of bad results. Even if not effective it is an addition to the food.

Dietetic Treatment of Constipation

2. One-half to two teaspoons of good butter once or twice a day may be given before nursing. This may be begun at four months. Butter is more effective and safer than cream. It is readily taken; does not require melting or sweetening.

3. Scraped apple, one to three teaspoons daily, may

be given in winter to babies over eight months. It is quite successful, but is especially dangerous in summer.

Among the drugs, milk of magnesia is least harmful and gives the best results. Unfortunately, its effect varies with each child, so begin with one-fourth of a teaspoon every six hours until it acts, increasing or decreasing the dose as necessary. It may be given in milk.

Drugs

Mineral oil, sold as liquid albolene and nujol, and under many other proprietary names, is effective—one teaspoonful night and morning, increasing or decreasing according to the indications. Both of these remedies are beneficial when stools are hard and dry, and they have little tendency to cause a habit.

If the day has passed without a satisfactory stool, give an enema at bedtime and a laxative. Enemas, especially small low enemas, are probably harmless, but their relief is only temporary. If the case resists this treatment, apply to your physician.

In addition to the measures suggested for breast-fed babies, cereal water instead of plain water may be used in making milk mixtures for artificially-fed babies. Oatmeal water is most laxative. Changing the sugar from cane to malt or milk sugar, or *vice versa*, may have the desired effect. Malt sugar, in my opinion, is most laxative, though others think differently. Increasing the amount of sugar may correct it, though it must be done cautiously. Making the milk richer by using cream or top milk instead of whole milk is dangerous. Too much cream may aggravate the condition, causing hard, white stools.

Constipation in Artificially Fed Babies

Constipation in older children should be treated as in adults, but they are more susceptible to the training

process, which should be begun early, but may be begun at any age.

Diarrhoea

Summer diarrhoea, dysentery, colitis, summer complaint—different names for the same disease—represent a condition of thin stools more frequent than normal, with blood and mucus. It is not, strictly speaking, a disease, merely a symptom, being nature's effort to rid the intestine of some irritant. It is the most fatal of all the infantile conditions that confront us. The predisposing causes are: Age, season, hygiene, teething, food.

Age—It is more frequent under two years. In older children it is quite common, but not usually serious.

Season—Diarrhoeas begin in June and are prevalent until heavy frost; worse in the early summer than later. This is probably due to the depressing effects of the first heat and also to the changes in the food.

Causes of Diarrhoea

It is impossible to escape the danger of summer diarrhoea entirely. The best preventive is to take the baby to the New England coast or to Northern Michigan. One must go early and stay late. The low mountain resorts east of the Mississippi offer a poor means for the escape from this scourge, though, of course, they are much better than crowded cities or even adjacent low country.

Hygiene—Fortunately in the South, hygienic errors play but little part in the causation of diarrhoea. Our babies have plenty of fresh air and usually good surroundings. There is little of the tenement element to contend with. The grossest errors seen are too much clothing and overheated nurseries in the winter, which cause anæmia and lack of resistance. Babies with the best surroundings are often kept in a nursery with a tem-

perature of 80°, with no fresh air, and loaded down with flannel. If the same heat were present in the summer, the mother would be at the seashore.

Teething—This by some modern writers is forbidden a place in the causation of diarrhœa, and possibly correctly so. During an acute teething period, baby is restless, fretful, sleeps poorly, is perhaps slightly feverish (never more than 100°), and certainly there is a diminished power of digestion. Foods should be weakened during an acute teething period. It is the undigested food that exaggerates the situation. Teething means not illness but merely a period of predisposition to it, and must never be accepted as the explanation of diarrhœa, as is so frequently done. On the other hand, should diarrhœa develop during a teething period, the most strenuous efforts should be made to correct it at once.

Food—Food is the great predisposing cause. Breast-fed babies rarely have diarrhœa except as referred to on page 31, and this is insignificant. The mortality of the few that do develop it is strikingly low. Human milk seems to immunize against it; even a small amount generally protects.

Good milk is essential in the prevention of diarrhœa. In the presence of one or more predisposing causes, age, season, faulty hygiene, teething—always boil the milk to be sure of its sterility, also in a measure to get rid of the peculiar element contributed by weedy pastures in early summer.

During the winter, baby should be kept thoroughly nourished. Even though apparently well, see that he is getting a balanced ration. If fed on patent foods with an excess of sugar, he may be rolling in fat but show little resistance to diarrhœal infections when summer comes.

Undigested food of any sort is a predisposing cause. The stools should be carefully watched and the appearance of undigested food regarded as a danger signal. Do not give tastes of forbidden foods. Even one strawberry may start a fatal diarrhœa. Do not try to force a baby to gain in the summer by giving overrich milk; keep him well and be satisfied.

The exciting cause is a germ or germs, the exact nature of which is not well defined, but all precautions should be taken to avoid infection. In the country
Exciting Cause open privies should be screened to prevent access by flies. Water should be boiled; soiled napkins must be kept in flyproof containers, and food and feeding utensils carefully protected from flies.

In order to prevent diarrhœa, observe the following rules:

1. Human milk is the only perfectly safe food. Make the best use of every available drop.

2. Patent foods are deficient in fats and freshness, and though babies may appear to thrive and fatten on them, they lack resistance and fall early victims to diarrhœal infections.

3. Feed babies only the best and freshest milk available.

4. Boiling the milk makes it safer and more digestible. The only defects are the constipating and scorbutic tendencies, which are easily corrected.

5. Babies need less food in the summer. In the beginning of hot weather, weaken their milk mixture and give more water.

6. The appearance of partially digested food in the stools, such as milk curds, is a danger signal not to be neglected. Such masses scrape off the protecting intestinal lining and favor infection.

7. Do not attempt to correct constipation in young children *in the summer* by laxative foods. You are liable to overdo it and start an uncontrollable diarrhœa. Purgatives are safer.

8. *Fruits and vegetables should not be used in the summer with babies under two years of age, and only with the greatest care with older ones.*

9. At the onset of any acute illness, digestive action stops or is greatly impaired, and food does not nourish but becomes a culture medium for the invading germs; hence, whenever the baby is the least bit sick, stop all foods, especially milk, and give only water, but plenty of it, until the exact nature and extent of the pathology is determined.

10. Treat all bowel disturbances as serious. The natural tendency is from bad to worse. Begin early and prevent terrible cases.

Diarrhœa is too serious a disease to attempt to outline the treatment. Get the best physician available. Do not

Treatment be satisfied with giving a purgative. Oil and calomel simply clean out the alimentary canal, but remember that digestion stops, or is weakened, with an onset of the infection; and unless you stop food, the purgative does no good, rather harm. Castor oil is not healing; only cleansing.

CHAPTER VI.

CARE OF THE SICK BABY

Nursing

While not so attractive a subject as that of keeping the baby well, we should know what to do with him in adversity. Prevention is far more effective than cure, and every effort should be made to keep the baby thoroughly built up to resist disease.

Do not give any article of food simply because the child wants it or because it will do no harm. Be sure that everything he eats will help build him up and do good.

Choose a well-lighted, well-ventilated, quiet room. Keep the temperature not over seventy. Nothing is so depressing to a child as an overheated room. If **Sick Room** he is cold, apply hot water bottles, or better still, hot blankets. Be careful not to burn him, which is easily done. Allow no company. Illnesses often prove contagious when not so suspected at first. Especially keep other children away. In the summer it is often quite restful to take him out under the shade of a tree. Always nurse the baby on the bed; never in the lap. The bed supports him better, is more comfortable, and allows freer respiration and better air, while nursing in the lap requires so much more care and attention on the part of the nurse.

Once daily a sick baby should have a cleansing bath, a quick one, with the least possible disturbance. A **Bathing the Sick Baby** sponge bath will answer, though sometimes a rapid tub bath is less depressing. If the circulation is bad in the morning, as shown by cold feet and

hands, the bath should be delayed until later in the day, when he has warmed up.

History of Illness The mother should be able to describe to the doctor the child's condition since the beginning of the illness, his sleep, his manner of playing, his appetite, his pain. Never ask a child specifically what hurts him. A nervous child naturally attributes pain to any point suggested. Watch him, or press on him, and tell by his actions and expressions where the pain is. It is very necessary to examine the stools. Always save them for the doctor; he should see every one of them, no matter how many there may be. It is a good plan to place a piece of cloth, about eight inches square, in the napkin, so as to catch practically all of the stool; put this in a flyproof box for the doctor's inspection, while the napkin is promptly sent to the laundry.

The doctor should see the baby without clothing. When expecting the doctor, take off the clothes and wrap the baby in a blanket, and so save the nervousness caused by the trying ordeal of undressing in the presence of a stranger.

Diet During Illness Indigestion, to a certain extent, complicates every illness, especially in the summer, when digestive disorders are prevalent. When illness begins, digestion stops and food given feeds the germs of disease rather than nourishes the baby. The most important direction in the beginning of an illness is to lighten the diet. Under two years, allow no milk and no solid food; even breast milk should not be given until the doctor so advises. Until further orders, give plain water, strained barley water, toast water, or cracker tea. If over two years old, strained broth, or boiled milk diluted with equal parts of water may be given.

In stopping milk, the chief water supply of young

babies is withdrawn, yet in illness, with high temperature, and increased loss of water through bowel actions, vomiting, etc., a baby needs water more than in health. Do not wait for him to ask for water, but offer it every few minutes.

Water

Indiscriminate use of drugs does more harm than good. Be sure that there is an indication for every dose of medicine given a baby. It is far preferable to omit all drugs until they are ordered. Paregoric and fever mixtures will mask symptoms and deceive the physician. While purgatives are probably more useful, they do no good except to cleanse the intestine of fermenting food. It is useless to give them unless food is withheld at the same time. Purgatives in the presence of abdominal pain are especially dangerous and should never be used. Until the doctor comes, it is best to content yourself with giving a tepid bath, if necessary to relieve fever and restlessness, and an enema to empty the lower bowel.

Drugs

Do not trust your memory; write the doctor's orders and follow them accurately.

Be positive in giving medicines. Do not coax a child to take it. Do not deceive. If it is disagreeable, do not say it is good. Do not make a face at the medicine yourself for the child. Do not mix drugs with food. An exception to this rule is milk of magnesia, which may be given in milk without altering the taste. Babies dislike highly flavored mixtures. A simple bitter is more readily taken than highly seasoned stuff. In giving a powder, mix into a paste with sugar and water. Castor oil should be warmed to make it flow freely and not stick to the mouth. The various scented castor oils are effective and easily taken, especially by

**Adminis-
tering
Medicines**

older children. If necessary to force the taking of oil, do the same as you do in forcing the child to take food.

Teach the child to consider the doctor his best friend. Never threaten him with the doctor. Do not tell him that he will have to be cut open if he eats imprudently, or promise an amputation of the thumb if he doesn't stop sucking it. Do not associate the doctor with castor oil.

Children should be accustomed to a routine daily throat examination when well, so that when the doctor is obliged to see the throat, it will not require such a struggle.

Forced Feeding

While digested milk is the best possible food, if undigested it is the most dangerous. Milk should be discontinued at the onset of any acute disease. Unfortunately, when it is stopped the chief water supply ceases. A year-old baby takes over a quart of milk daily. If he is sick, it is difficult to get him to take one glass, or eight ounces, of water. He may take it frequently, but almost in inappreciable quantities; yet a sick baby needs water more than ever for the following reasons:

1. To replace the extra loss of fluids from the body, due to vomiting, diarrhœa and the febrile processes.
2. To make possible proper secretions and excretions and so to promote digestion and elimination of the poison.
3. While in most diseases we do not know the antidote for the toxine producing them, we can relieve symptoms by diluting the poison and lessen its effects by giving water and plenty of it.

Hence, when ill, an ordinary child a year old should get at least a quart of fluid every twenty-four hours, and

better still, two quarts; if under six months, one and one-half pints will answer; and under two months, one pint. Do not wait for a sick baby to ask for water, but offer it every few minutes. Try to get the amount down in the daytime, so that he will get rest at night. It is by far the most important thing we can do for the patient. He can live days without food, but rapidly wilts without water. Do not regard the interval nor the quantity given,



DIAGRAM ILLUSTRATING THE METHOD OF
FORCED FEEDING

The spoon introduced far enough to prevent closure of the teeth and also to hold the tongue down.

but keep account of the entire twenty-four-hour amount. If the quantity he takes willingly is not sufficient, it must be forced.

It is not unusual to see a diarrhœal case ill several days with probably an average daily intake of four or five ounces of fluid, the skin dry, paper-like, mouth parched, kidneys sluggish, head thrown back, tossing on pillow, moaning, but too dry for tears. Such is the picture of a sick baby deprived of water—the tissues craving it, but the appetite repelling it.

Formerly fluids were forced by pouring them down through a small stomach tube, necessitating the presence of a physician or a specially trained nurse. The following method has been successfully used by the author for two years, with no bad results. It can be done by the family, best by three persons, though two may succeed. One assistant holds the hands and feet, the other the head and the spoon in the mouth. Place the bowl of an ordinary teaspoon in the mouth over the tongue, so that the upper third of the bowl projects beyond the lips, and into this projecting part pour the liquid with another spoon or a bottle.

Eight ounces may easily be given in fifteen minutes. There is little lost, and not much tendency to vomit. It is best to give small quantities frequently, as the process is easy, rather than risk over-distension of the stomach. There is no danger of strangulation if only liquids are used, though it may produce a slight cough.

The many advantages over the stomach tube are too obvious to mention. It is also the best way to give castor oil to a resisting child. I have never heard of the use of this method before, though it is so simple it seems impossible that it should be new.

If a child passes twenty-four hours without getting his

full fluid allowance, see that he gets it during the next day; by persuasion if possible, by force if necessary. Usually, but not always, after getting the full amount for one or two days, normal secretions are established, appetite returns, and fluid is taken willingly.

Baths, Packs, and Enemas

Strip the baby, lay him on a soft quilt, and sponge him with tepid water. The reduction of heat depends upon the evaporation of the dampness. This is soothing, but not very effective in lowering the fever.

**Warm
Sponge
Bath**

Full baths may be given in an ordinary tub, but it is hard and uncomfortable. A puddle bath is much more satisfactory to both patient and nurse. Use a rubber sheet at least a foot longer than the child; all around under the edges of this place a rolled sheet, thus making a tub in bed. Always begin with tepid water, about 100°. Keep a wet towel over the abdomen, and an ice bag to the head. Gradually reduce the temperature of water to 90°. Sick babies, even though feverish, do not like cold water. Bathe until the fever is reduced to 102° or 101°, using a thermometer in the rectum every few minutes. There is less shock to a forty-five-minute tempered bath thus given than to a ten-minute really cold bath of 70°. Rub dry with considerable friction, and if the feet are cold apply hot-water bottles. The fever will continue to decrease at least one-half hour after finishing the bath. As to the amount of fever requiring a bath, 103° is a fair limit, but the beneficial results are as much from the soothing effect as from reducing the temperature. It is more necessary to give a bath to a nervous, twitching, irritable patient with 102° than to one resting quietly with 104°.

**Puddle
Bath for
High
Fever**

This is used to reduce temperature and relax. Soak a large Turkish towel or blanket in as hot water as can be borne, wring out the excess, and quickly wrap the child in it, and allow it to remain for ten minutes. Dry rapidly and wrap in a warm blanket without stopping to put on the gown. He generally sleeps quietly for an hour after this.

Hot Pack

Hot Mustard Pack

This is given the same way, except that one rounded tablespoon of mustard is used in each gallon of water.

This is used to relax and also to reduce temperature and to stimulate. Put two rounded tablespoons of mustard in a tub of water (about ten gallons), temperature 105°. Immerse the child up to the neck and allow him to remain for five minutes. Have a warm blanket with a large towel ready, wrap him up with blanket and towel; dry with towel while still wrapped, withdraw it, and let him sleep off the relaxing effects of his bath rolled in the blanket, without disturbing him to put on a gown.

Hot Mustard Bath

This is indicated in skin diseases, such as prickly heat, or eczema, and with babies whose skin soap seems to irritate. Procure ordinary wheat bran from a feed store, make a cheesecloth bag sufficient to hold a large handful of the bran, and put this bran bag in the bath water while it is very hot. By the time it is the correct bathing temperature, it will be an emulsion. Use the bran bag as a wash cloth. It is an effective cleanser and does not deprive the skin of its natural oil as soap does. Of course, use fresh bran for each bath.

Bran Bath

During the first year, the ear and ulcer syringe of soft rubber is sufficient for the ordinary low enema; there are two sizes—one and three ounces. The larger is preferable. It is impossible to hurt a child with it. Do not get the so-called infant syringe, which has

Enemas

a hard rubber tip. Warm water or normal saline solution (one-half teaspoon of salt to the pint) is generally used, unless other solutions are specified. One to two large syringefuls or one to four small ones may be introduced at a time.

The ordinary fountain syringe is better after first year. Hold the bag so that the surface of the water in the bag is not more than one and one-half feet above the rectum, and there need be no thought about the quantity taken. This much pressure can do no harm. The rectum fills up and overflows. By holding the baby on the right side and elevating the hips, a thorough flushing of the lower bowel can often be accomplished as well as, or better than, by using the rubber catheter, which is sometimes difficult to introduce, owing to the peculiar folds of the bowel.

Use the fountain syringe with No. 10 soft rubber catheter, attached. Introduce the catheter well anointed with vaseline, about two inches, holding the bag about one and one-half feet high; allow the water to dis-

High Rectal Irrigation tend the lower rectum, then slowly push the catheter farther in, which can usually be done readily, though sometimes it may double on itself and twist up. If this happens, try the method suggested above of raising the hips, which is easier and almost as reliable.

CHAPTER VII.

EMERGENCIES

Sudden Vomiting

Sudden vomiting is always alarming to mothers, but it is only nature's method of getting rid of something unsuited to the stomach, which, if retained and passed through the intestinal tract, might cause serious illness. Instead of trying to stop it, vomiting should be encouraged by giving copiously plain water, or better, one level teaspoon of cooking soda (sodium bicarbonate) in a glass of hot water. When the stomach is thoroughly cleansed, the nausea will cease. Give as much soda water as possible, three or four glasses will do no harm. Crushed ice is soothing. Withhold all foods until the child seems normal. Sudden vomiting, especially if accompanied by fever, may be the initial symptom of some infectious disease, and, of course, demands the attention of a physician.

Indiscretions in Diet

When improper food has been taken, such as a bottle of sour milk, or indigestible articles pilfered from the refrigerator, or green apples from the garbage pail, do not think of a dose of oil, but give at once one-half to one teaspoon of syrup of ipecac, repeating every half-hour until vomiting is produced. If possible, give hot water or soda water, to assist in cleansing the stomach. This is far better than a purgative, because you get rid of the material at once, instead of forcing it down through the more easily infected bowel. There is no objection to

the use of oil afterwards, especially if the indiscretion is discovered late, when some of the undigested food has passed out of the stomach into the bowel.

Swallowing Foreign Bodies

It is natural for a child to put everything into his mouth, so nothing small should be used as a plaything or left within reach. Toys should have no projecting points to break off. It is remarkable how large an object, even with sharp points, can be swallowed and successfully passed. The narrowest point of the entire tract is at the root of the neck; and if it gets by this into the stomach, it is generally passed easily, but slowly. It is usually a week, sometimes longer, before it is discovered in the stools.

Unless the foreign body lodges in the throat, there is nothing to be done. If an emetic is given, the narrowest part of the entire passage is in the swallow, and it may lodge there returning. If a purge is given, the hurrying through may cause it to catch. Let it alone; have patience; it will pass. If there are any sharp projecting points, give plenty of starchy foods, such as bread, cereals and potatoes, or with younger babies, cereal gruels which leave quite a residue after digestion and coat the body, at least partially covering the sharp points. Babies have successfully manipulated coins, buttons, ordinary pins, tacks, open safety pins, small dolls, peach stones, and a watch chain with a cross-bar. There is no danger of poisoning from swallowing a copper cent. The X-ray affords great assistance in watching these cases, but is not often necessary.

Abdominal Pain

This very common ailment was formerly the invariable signal for castor oil. The usual cause is intestinal indi-

gestion, and oil is correct if you are sure of the diagnosis. Not infrequently, however, appendicitis or intestinal obstruction may cause stomach ache. In such cases, castor oil or any purgative does irreparable injury, converting a simple surgical operation into a very serious one, besides losing valuable time.

First relieve the pain. This is certainly more humane. Empty the stomach by giving one-half to one teaspoon of syrup of ipecac every half hour until vomiting is produced. Apply a plaster made of one part mustard and four to eight parts flour to the painful region until the skin is red (usually ten to twenty minutes—do not blister). Give a high enema, a teaspoon of salt to the bag of hot water, holding the bag two feet high. There is no fear of giving too much with only this pressure. If after these remedies the pain is not relieved, call your physician. Do not give a purgative in the presence of acute abdominal pain. (For "Colic," see page 32.)

Croup

Simple catarrhal croup is a bad cold in the larynx which causes, through the inflammation of the vocal cords, a hoarseness and a spasmodic contraction of those cords, which apparently tends to produce strangulation, but never quite accomplishes it; for as soon as the child relaxes, he gets a good breath. Catarrhal croup is not dangerous, but alarming. It must not be confused with membranous croup, a most serious condition, which is diphtheria affecting the larynx.

Simple croup is in a measure hereditary. Children of certain families are subject to it. A slight cold with them will cause croupy symptoms, which appear at night and are usually repeated for three or four succeeding nights, while in the day there is no sign of it, except pos-

sibly a cold or cough. He awakes at 11 P.M. with a hoarse barking cough, which becomes more frequent until every breath is rasping. The child is excited and this increases the spasm. If nothing were done to relieve him, he would finally relax, drop into a sleep from exhaustion, only to begin again after a rest; and although passing a horrible night, would seem to be as well as usual the next day.

Build up the child so as to prevent colds. Accustom him to fresh air night and day, but do not try to harden.

Reduce the nervous tension by regular bed hours.

Treatment A morning cold sponge bath may be begun. (Page 111.) Avoid exposure to infections. If croup is anticipated, give a light supper and a laxative. Rub the chest and throat thoroughly with camphorated oil. Give a hot footbath at bedtime. If cough is severe, with a croupy tendency, give, for a three-year-old child, five drops syrup of ipecac in a teaspoon of water, hourly. If the cough is tight and hoarse, and the child excited and nervous, add to each dose ten drops of paregoric. If this fails to relieve, give one-half to one teaspoon of syrup of ipecac every half hour until he vomits, which relaxes him and relieves the muscular spasm which causes the croup.

Inhaling warm, moist air sometimes relieves. This is best applied by use of the croup tent, which is made by throwing a sheet over his bed, or if on a large bed, by raising an umbrella and throwing a sheet over that and running the steam under the tent thus made. The steam may be generated by an electric heater or a small tea-kettle set on top of an inverted electric smoothing iron, with a paper pipe made of a rolled magazine to convey it underneath the tent. Opening a kettle of boiling water under the tent may supply enough heat and moisture.

The mother may lie down under the tent with the child if he is frightened. Ice cloths applied to the throat frequently relieve croup, but must be used carefully.

Membranous Croup Membranous croup has the same hoarse, barking cough and obstructed breathing. It is very serious, but never becomes so under twelve hours. It persists day and night, usually a little worse at night, but it is progressive in intensity, with little or no fever. Croup in the daytime demands medical attention.

Convulsions

This most alarming emergency is but a symptom of some serious condition, and not a disease in itself. It may be due to brain disease, but this is rare in childhood; it may be the initial symptom of some infection, as pneumonia or scarlet fever. A chill in an adult is often equivalent to a convulsion in a child, but the common cause of convulsions in childhood is some food poisoning.

Symptoms There may be forewarnings, such as muscular twitching, restlessness, or fever. Suddenly every muscle contracts, the head is thrown back, eyes are open and drawn, back bowed, hands gripped, teeth clinched, sometimes biting the tongue; breathing is labored and slow; the child is totally unconscious. All of these symptoms may last from one to thirty minutes, then the child lapses into a deep, semi-conscious sleep.

Treatment Of course, the physician is called at once, and it is left to him to determine the exact cause of the trouble, but the symptoms are so urgent that something must be done before his arrival. The great majority of convulsions, certainly nearly all of those that immediate treatment will relieve, are of digestive origin. It is safe to assume this, so direct your efforts first to relaxing the spasm, then to cleaning out the alimentary

canal. A warm bath, preferably containing mustard, is a time-honored remedy and a good one. It should be as hot as can be borne, but not scalding. This takes several gallons of hot water. A hot mustard pack (see page 91), requiring only a half gallon of hot water, is quicker and just as effective. Even tepid or cold water with mustard will do good. While in the bath or pack, give the child an enema, preferably of soap water or plain water. If he has taken food within the past four hours, just as soon as he can swallow give a teaspoon of syrup of ipecac, repeating every half hour until vomited. After the stomach has been emptied, or at once, if there has been no food taken for at least four hours, give one tablespoon of castor oil. Nothing but water, and plenty of it, should be given by mouth, but even wait for this until the castor oil has settled.

Convulsions are rarely fatal during the attack, though always alarming. Their seriousness depends upon the cause, which can only be determined by a careful study of the case. In some nervous children, apparently insignificant disorders will produce them.

Nose Bleeding

Nose bleeding is rarely serious; often even helpful. It usually stops before harm is to be feared.

Let the child sit up, not lie down, and apply ice cloths to face and nose. Plug the nostril with cotton or soft cloth and allow the plug to remain at least one hour after the bleeding has ceased. Of course, the bleeding may continue through the back of the nose and the blood swallowed cause subsequent vomiting, but usually it stops. If these measures do not succeed, consult your physician.

Foreign Body in the Nose

If something becomes lodged in a nostril, stop the other nostril and make him blow it out. If this fails and the object is plainly seen, try to pull it out with a bent hairpin. Do not bruise the parts and cause swelling. If not successful after a few careful trials, consult a specialist.

Foreign Body in the Ear

Unless this comes out most readily, see a specialist. Efforts to remove frequently push it farther in and increase the pain.

Earache

Earache in a baby is difficult to recognize. Look everywhere else for the cause of pain and if nothing is found, suspect the ear. Pressure just in front or behind the canal, even when he is asleep, will show tenderness and confirm your suspicions.

Fill the ear with warm glycerine, or irrigate with water as hot as can be borne, and apply a hot cloth, or wrap the head in a warm shawl. Ear pain may indicate the formation of pus in the middle ear. If it continues over a few hours, or if accompanied by fever, it requires the services of a specialist. Ear infections are practically always extensions of diseases from the throat.

Burns and Scalds

If severe or extensive, call the doctor at once. Keep the parts clean and apply a soothing lotion. Do not break the skin. A plaster of sodium bicarbonate and water spread on gauze or cheesecloth and applied is soothing; or use the following solution: Put one heaping tablespoon of magnesium sulphate (ordinary salts)

in a tumbler of water. Wet gauze with it and apply. After pain is relieved, use an antiseptic ointment.

Bruises and Wounds

Bruises need but little attention if the skin is not broken. Ice cloths relieve pain and swelling. As nearly as possible keep parts at rest. If the skin is broken, keep the parts clean and make one application of tincture of iodine to the surface of the wound—not to the skin around it. Iodine quickly blisters the skin of a child, so use carefully; then apply a sterile gauze dressing. If there is bleeding, apply a folded handkerchief or gauze pad or cotton, and press on it. Very little pressure will stop even severe bleeding. If there is a spouting artery, press hard; if on an extremity, tie a handkerchief around the limb about the wound tight enough to stop circulation, and call a surgeon.

Crying

Crying is not always harmful. It distends and helps develop the lungs, which is quite beneficial, especially in frail babies. It is the only way the baby has to show mental or physical distress and the cause should be determined. Instead of hunger being your first guess, it should be your last.

Crying may be due to:

1. Indigestion or colic, when food would only add fuel to the fire.
2. Thirst. Give warm water; it can do no harm.
3. Uncomfortable clothing, a pin, tight band, or napkin. The napkin may be soiled.
4. Cold feet. Apply heat.
5. He may be too hot or the room too close.
6. He wants to be taken up. Don't do it except to investigate.

7. He may want company or a light or rocking. If he gets what he wants, he will cry again. Don't start the habit.

8. He may have a lump of feces in the lower bowel. If constipated, give an enema.

9. He may have sore throat or an earache. Examine the throat. Press gently in front and behind the opening of the ear and see if he flinches.

10. He may be ill. See if he has fever. Watch his posture and expression to locate the pain.

11. He may be hungry. If he gets a full feeding at proper intervals, it cannot be this.

CHAPTER VIII.

MINOR AILMENTS

Birthmarks

Many babies have birth marks. The most common form is a pinkish or bluish splotch between the eyebrows or on the nape of the neck about the edge of the hair. Unless it is raised above the surface and can be felt as well as seen, it will probably disappear in four months, only to be slightly visible after that during crying or coughing which congests the head.

A raised dark red mark on any part of the body sometimes enlarges with wonderful rapidity. As soon as it is noticed, cut a piece of paper its exact shape and size, mark the date, and watch it. If increasing, the sooner it is removed the better; but if stationary, it is preferable to wait until the baby is stronger.

Protruding Ears

Protruding ears disfigure a baby more than a child or an adult, but most mothers want it corrected at once, and it is easily done. Be careful in laying him down not to fold the ear forward. Paste the ear back with a strip of adhesive plaster one-half inch by one inch, or in bad cases have it twice as long and let it go entirely across the ear. Shave off a little of the hair so that it will stick well. The earlier the treatment is begun, the better. Usually after a few weeks the tendency to stick out is overcome. The rubber stains on the skin from adhesive plaster are easily removed by sponging with gasoline

(do not use it near a fire). A cap of tape is made to hold the ears in place, but is more disfiguring and much less effective than the plaster.

The Nervous Child

Nervous-
ness Some babies are born nervous; others have it thrust upon them. A nervous child cries easily, sleeps lightly, digests with difficulty, wears his mother out and causes early disappearance of breast milk, necessitating artificial feeding with its attendant woes.

Finally, by trials and tribulations, he gets through the pitfalls of babyhood, becomes an interesting toy for his elders, goes to bed late in an excited state of mind, sleeps poorly, eats hurriedly, without chewing. His appetite becomes capricious. He stops milk, as it is too tasteless. He is too occupied to drink enough water. The only time he drinks is with meals, which is better than not at all, but water is filling, and takes the appetite for stronger food, and very frequently it is used to wash down imperfectly masticated food. His precocity has won many thoughtless adult friends who slip him sweets, then appetite fails, teeth decay. He becomes wiry, skinny, and often begins bed-wetting.

He is headstrong, spoiled, disobedient, does not recognize authority, develops an uncontrollable temper. This temper, which grows as he does, will become a potential evil.

He goes to school early, is precocious, a favorite with his teachers, makes two grades a year, develops a fondness for books and reads when he should be sleeping or having outdoor exercise.

School hours are not regulated for the physical good of the child. He eats breakfast hurriedly, and excitedly, rushes to school with food half masticated; relies on his

school lunch (too often a ham sandwich and candy; milk and soup are rarely served except to poor children), returns physically and mentally exhausted to a cold dinner, then takes too much supper. How can you blame him, as it is the only normal meal? He sleeps restlessly as the result.

How can we expect the best results, physical or mental, under such circumstances? Do not push, neither retard a child. Anything which does not interfere with his fresh air, good sleeping and early retiring is permissible.

He may survive it all with an uninjured nervous system, but the chances are against him. Usually he becomes a neurotic, taking everything hard; a dyspeptic, with a sour disposition; possibly a success, but through hard knocks and much unhappiness.

A wonderful work could be done for a child of this nature if training is begun at birth. Unfortunately, too often this training devolves upon an overworked mother, herself almost a nervous wreck, not equal to the undertaking. Impress upon her the necessity for regular nursing; better, put the baby under the care of a special nurse. Be sure that the mother gets plenty of sleep and fresh air. Relieve her of all responsibilities possible. Be even more careful to see that baby's nutrition is kept normal; weigh before and after nursing, to know that he has enough. Supplement the breast as soon as it is indicated. Do not let him be fondled or played with. Make him lie in bed except when nursing. Accustom him to sleeping under varied circumstances—without a fooler, with and without light, without rocking, with and without noise. It can be done. Even throughout childhood, never allow him to miss his midday nap, or rest, even if he will not sleep. Establish an early, regular bed hour, and do not deviate from it.

Allow no excitement before retiring. Do not permit anyone to scare him with ghost tales, or teach him to be afraid of the dark. Read soothing stories to him. Make him eat regularly, masticate thoroughly. Give sweets only after a meal, especially forbidding ice cream and soft drinks between times.

Do not teach him to be a "stunt" child. If he naturally wants to sing or recite, there is no harm in it; but it should come naturally. His progress at school must not be forced. Such a child can often make two grades in a year. If it does not interfere with his regular bed hour, his regular exercise, and his appetite, it is entirely permissible. Such nerve force is a wonderful power: if properly directed, a blessing; if allowed to run riot, a danger. Training should begin at birth, but it is never too late to improve him.

Good Habits

All children can be trained to acquire the following good habits, provided they are healthy and properly nourished:

1. To wake at feeding time.
2. To go to sleep without rocking, without foolers, with and without lights, with and without noise.
3. To take freely plain water, not sweetened.
4. To sleep all night after four months of age, if not earlier.
5. To have bowel actions regularly.
6. To control the bladder even as early as four months.
7. To amuse themselves.
8. To obey.
9. To expose their throats for daily inspection.
10. To put away toys after playing.

11. To hang up clothes after undressing.
12. To regard the doctor as a friend.
13. To eat what is good for them.

Bad Habits

Though often begun as a sign of hunger, thumb or finger-sucking becomes a habit. Young children may be broken by using a long-sleeved dress and pinning it to the mattress, or by tying a pasteboard splint around the elbow to prevent bending the arm. In older ones, wind around the thumb or finger a narrow strip of adhesive plaster, which may be soaked in a solution of quinine. There is little to be expected from the bitter applications alone; they lick them off and continue sucking, but the bitter sticks longer to the adhesive plaster. Putting the hands in bags may succeed, but the use of aluminum mits, procurable at any surgical instrument shop, is the surest method. Do not frighten him by telling him the doctor will have to cut his thumb off.

Nail-biting is corrected in the same way. The earlier the treatment is begun, the quicker the cure. It is an evidence of an overwrought nervous system. It is an ugly habit and may persist through life.

The pacifier habit, obviously forced upon babies, not self-contracted, indicates that something was wrong in the child's early months. If he was hungry, it certainly did not help; if he had colic, it only served as a temporary pacifier, and so helped the family, not the baby. He could not tell his troubles and suck a fooler at the same time. The cause of crying should have been found and corrected, making the fooler unnecessary. It is continually dropping on the floor, thus probably infecting the mouth. If you must use it, boil it daily, rinse in boric acid water when dropped; or better, tie a

string to it and pin to the baby, so it will not reach the floor. While a fooler for a short time may do little harm, its prolonged use disfigures the teeth, causing the upper ones to protrude, an unsightly deformity.

Some children, usually from three to six years, have the horrible habit of dirt-eating. They will eat anything:

**Dirt-eat-
ing**

dirt, chalk, plaster, coal, ashes, stones. They are usually pale, anæmic, and nervous. Bring them up to normal (see "The Nervous Child," page 103) and stop the habit by main force.

Some babies in the second year are never satisfied unless sucking a cracker, or zwiebach—a most pernicious habit, and one that may cause considerable digestive disturbance. Give their meals at regular intervals. See that they finish within a half hour, and have nothing between times.

**The Crack-
er Habit**

Masturbation is common in children about the second year, especially girls. There is no way of breaking it except by watchfulness and tact. Have an examination made to eliminate any source of irritation.

**Mastur-
bation**

A leather cuff around each leg near the knee connected by a wooden bar between them usually prevents by keeping the legs separated. In boys, circumcision will cure. Children should be taught from early infancy not to touch their genitals.

Bed-Wetting, or Eneuresis

The natural instinct when the bladder is full is to empty it, a function which does not require brain activity. As the intellect develops, he learns to recognize the full feeling in the bladder, to know that it is not proper or comfortable to wet his clothing or bed, and uses the commode. The bladder is thus brought under the control of the brain. It is astonishing how early a baby

can be trained to urinate when held out at stated times. After a very few days training, he will learn to show by some signal when the bladder is full. At one year, certainly at eighteen months, he should be trained; if not, he is to be classed as a bed-wetter. The worst bed-wetters are those who have learned bladder control at the usual time, and for some reason relapse into baby habits.

Two causes may prevent successful training: (1) if the child is mentally deficient, there is not brain enough to train, and baby habits persist; (2) any serious bladder trouble, such as stone, inflammation, or even intensively acid urine may cause such a sudden, irresistible demand to void urine that it cannot be deferred.

The usual history of a bed-wetter is this: normal bladder control was acquired at one year, and retained until the age of three or four. He is a nervous child, plays with the family for two hours before retiring, is perfectly well otherwise; takes a great deal of exercise and fresh air, and retires at nine, exhausted and excited. In such cases, there is no organic disease. His brain has been too busy during the day; he is worn out and the call of a full bladder is not strong enough to awaken him. He is too occupied with other things to take care of it. He has forgotten that part of his education and has to be trained over, and it is much more difficult than at first. Besides, from the lack of distension, as it has been emptied unconsciously at the least provocation, the bladder is smaller than normal.

Drugs offer but little assistance in curing bed-wetting, and should be resorted to under a physician's directions, after other methods have failed. Punishments do

Treatment no good and are not justifiable. Rewards are much more satisfactory. The following routine, if persisted in, will finally correct the most obstinate case, provided the brain and bladder are normal:

1. Examine the urine, to exclude disease.
2. Give little sweets or meats, as these make the urine more irritating. Asparagus and raw apples may have the same effect.
3. Correct constipation, which throws more of the burden of elimination on the kidney. Also the presence of a huge lump of feces in the lower bowel may produce pressure on the bladder.
4. If adenoids are present to any extent, remove them. If there are evidences of pin worms, such as irritation or itching about the rectal opening, see your physician. If there is a very tight, adherent foreskin, circumcision is recommended, though this operation will not usually have the brilliant results expected.
5. Insist upon an early, regular, not excited bedtime; no picture shows or other nerve-straining diversions.
6. Do not let him sleep on his back. This causes the full pressure of the urine on the sensitive base of the bladder. Tie a towel around the body with the knot at the back, or sew a marble in the back of his gown. This will make him lie on his side.
7. Give all the water and fluids you can get him to drink up to 5 P.M. This makes the urine bland and unirritating; after 5 P.M., allow as little fluid as possible. No milk for supper.
8. Make him urinate at his bedtime. Some very nervous little fellows are so preoccupied that they forget it, or only partially finish. Take the child up at your bedtime, having the chamber always at the same convenient place. If necessary, with an alarm clock wake him at intervals during the night, usually once or twice is enough, and this after a few nights may be dispensed with.
9. Finally, train his subconscious mind into the fact

that the habit must be broken, by making him repeat just before retiring, "I am too old to wet the bed; I am not going to do it tonight."

Day bed-wetting, or clothes-wetting, is harder to break than the night habit. It requires constant watching and training to pass urine at stated intervals, which should be gradually prolonged.

Circumcision

Circumcision is not absolutely necessary in every case. If the foreskin can be easily drawn back (do not let it stay back—it will swell and cause trouble) the operation is not urgent. The choice time for the operation is after the age of three weeks, when there is no longer danger of continued bleeding from the lack of clotting power of the blood, sometimes seen in young babies; or before four months of age. In this interval, the operation can be done quickly, as no stitches are needed and no anæsthetic is used. After this, bleeding usually necessitates stitches, prolonging the operation, and an anæsthetic is required. If neglected in early infancy, unless the indications are urgent, it is best to defer it until the child is old enough to coöperate in the care of the wound. If done in early childhood, the nervous shock of the operation and subsequent dressings strike terror to him. Do not forget, however, to attend to it should there be any other operation—such as the removal of adenoids—requiring an anæsthetic.

Bad Colds

Many children are, through heredity, subject to catching colds, but more often through lack of hygienic and dietetic care. The way to relieve a cold is to prevent it. That colds are infectious one would hardly deny, and their prevention does not lie in drugs or vaccines, but in

building up the child to resist this tendency to infection, inherited or acquired. Avoid infection if possible. Do not allow babies to be kissed in the mouth. Every child from birth should have his own handkerchief. Do not rely on sprays or antiseptics. Any antiseptic strong enough to kill germs will probably erode the mucous membrane, which is nature's shield against invading germs. One cannot get entirely away from germs; they are everywhere. Not that one should purposely run into them, but strive by proper living to render oneself strong enough to resist exposure to infection.

Modes of Infection

When one talks in an ordinary tone of voice, the air is sprayed at least one foot, with droplets of saliva containing the germs of his throat and lungs. A louder tone will carry them two or three feet, coughing and sneezing as far as six feet. Expectorated material dries, becomes mixed with dust, and is so inhaled. These, with the common drinking cup and the family handkerchief, are the great sources of infection.

Prevention

Sunlight and air are the great antiseptics, as few germs can stand exposure, but the individual power of resistance is the chief preventive of disease. A well-balanced ration and plenty of fresh air and sunshine increase this power. Avoid chilling drafts, but get fresh air day and night. Avoid dust and coughing crowds.

Cold Sponge Bath

A cold sponge bath will improve the circulation and help some children, over two years, who are predisposed to colds. If once begun, it should be kept up regularly as nearly as possible under the same conditions. This has nothing to do with the cleansing bath, which is given first, then a pitcher of cold water is thrown over the shoulders. In winter, it may be tem-

pered some. Then rub briskly with a crash towel. If the child reacts quickly, and is red and rosy, it will do him good; if chilled and blue, it is too severe; if feet only are cold, try letting him stand in a tub of warm water while the douche is thrown over him.

Tonics An emulsion of cod-liver oil is often quite beneficial. Children take this readily, especially if it is made with chocolate. It should be given one-half hour before meals, only in cool weather, and only when digestion is in fair condition.

Treatment of Colds There is little to be done to help a contracted cold. Lighten the diet, give a free laxative and plenty of fresh air. Do not overheat.

Cough Mixtures Cough mixtures are justifiable only to secure rest at night. Do not try to stifle a cough. Children cannot spit until four years of age, and it is eight years before they can get rid of all the excretions coughed up. Coughing is their only method of keeping the lungs clear. Stopping the cough does not cure the condition; rather hinders it. Camphorated oil or mustard paste applied to the chest is often soothing. If there is fever, the cold has reached a dangerous stage, and requires a physician.

Adenoids and Tonsils

The discussion of colds brings up the unpleasant but ever recurring subject of adenoids and tonsils, which every mother has learned to dread. The accompanying cut shows the location of these much abused structures. With frequently recurring bad colds, often the product of faulty hygiene and diet, the adenoids and tonsils may become enlarged as the result of the repeated inflammation. The popular craze for the removal of these organs demands some comment.

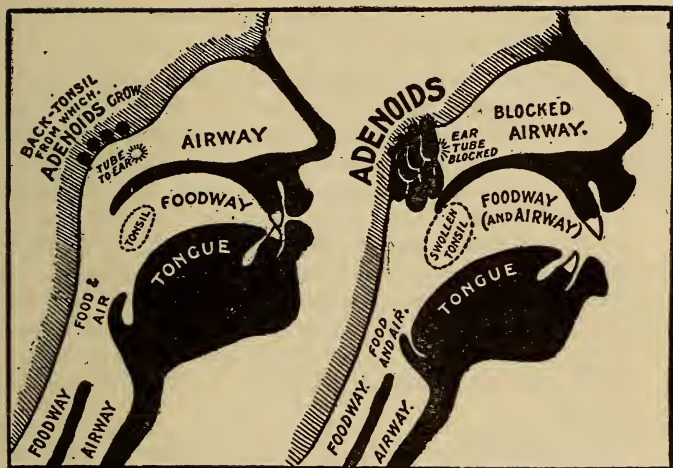


Diagram illustrating the normal throat and nose and the changes produced by adenoids. (Truby King.)

No operation in surgery, in selected cases, is followed by such strikingly beneficial results, but it does not signify by any means that every child should be deprived of adenoids and tonsils, even though it may be a simple operation.

The adenoid membrane is the natural mucous covering of the back of the nose, and the upper pharynx, and when subjected to repeated inflammation, becomes thickened, and fills up this passage with its overgrowth, which is called adenoids. They are back of the nose and above the throat and tonsils. The enlargement can rarely be seen, but is easily felt with the finger by hooking it back behind the palate. Note that opening into the adenoid membrane on either side is the Eustachian tube, leading

to the middle ear, and it is through this tube that infection readily extends to the ear.

Adenoids cause symptoms formerly described as chronic catarrh, with its tendency to deafness and ear infections. Adenoids produce a nasal voice, and by obstructing the normal breathing through the nose, cause snoring during sleep, mouth-breathing and flattened chest, and irregular teeth due to the deformed dental arch. The removal of the adenoids means the scraping off of this excessive growth, leaving the membrane only in its normal thickness. It is a simple operation and one of great value when necessary. Every child with an acute cold has the symptoms of adenoids, but they should disappear as the inflammation recedes.

**Symptoms
of Ade-
noids**

The indications for the removal of adenoids are: (1) A tendency to deafness or a history of repeated ear inflammation, possibly abscesses; (2) persistent signs of nasal obstruction, lasting after all evidences of acute cold have disappeared—such as mouth-breathing, deformed dental arch, flattened chest, snoring at night; (3) persistent nasal catarrh.

Tonsils

The function of the tonsil is not understood, though many unproved theories explaining its purpose have been advanced. We only know that it is largest in size about the age of six, then begins to shrink, and at twenty-one, should be a small mass of fibrous tissue. From this, the conclusion seems justifiable that whatever function it may have is largely over after the age of seven, and this would justify the statement that unless conditions are urgent it is not best to remove tonsils before seven years of age.

These are the indications for removal of the tonsils, rather than simply their size: One cannot tell the exact state of the tonsil by its appearance; the history of the case is more important.

1. Recurring attacks of tonsilitis.
2. The history of previous tonsilitis with resulting infections, such as rheumatism, heart or kidney inflammation.
3. Extremely large tonsils, partially obstructive.
4. In older children, tonsils should not be left in when adenoids are removed. Adenoids recur frequently under any circumstances, almost certainly if the tonsils remain.

Prickly Heat

This is a common eruption, characterized by redness of skin with slightly raised pimples, and is seen in hot weather. It usually comes on the tender skin of the neck, armpits, or groins, but may almost cover the body.

Dress lightly and have no woolen stuff in contact with the skin. If heavier clothing is necessary during cool mornings and evenings, use outside wraps, easily

Treatment recognized as too hot for midday, and removed.

Some babies cannot stand soap in the summer, and the bran bath must be constantly used. If the bran baths, correct dressing, and plenty of powder do not relieve prickly heat, make this application after the bath, or several times a day if necessary: Two drams each of zinc oxide, prepared calamine, and glycerine in four ounces of milk of magnesia; mix and apply locally with a cotton swab.

Chafing Buttocks

Chafing may be due to too much soap or washing powder left in the napkin. In rare cases, irritating urine is

the cause, occurring especially if a rubber diaper is constantly used. Ordinarily it is a sign of fermenting food and indicates that there is too much sugar in the food. Nothing will permanently relieve it but correcting the diet. In itself it is not so serious, but it means that the lower bowel is also chafed and congested, a tendency to dysentery.

Sore Mouth; Sprue or Stomatitis

In infancy, three forms of sore mouth are seen:

1. Red ulcers appearing in the back of the roof of the mouth, due to bruising by over vigorous mouth washing soon after birth. If baby thrives, these disappear rapidly and need no treatment.

2. By far the most common form of sore mouth is thrush. A white flake resembling a film of milk appears on the inner side of the cheek and rapidly spreads, even over the entire cavity. It is rare in healthy, well-fed babies. It is probably caused by a dirty nipple or pacifier which has been dropped on the floor. If the mouth is healthy, it will resist infection, but if improper diet causes over-acidity or congestion, the infection starts readily. Prevention is better than cure. Keep dirty things out of the mouth, and adjust the diet properly. If infected, paint the spots several times daily with a solution of chlorate of potash—a teaspoon to a glass, using a match with cotton twisted around it. If accustomed to a pacifier, make a virtue of it by dipping in the boric acid solution frequently, thus making an antiseptic application. If not better in twenty-four hours, call the doctor.

3. The third form of sore mouth, fortunately rare, is that due to scurvy, caused by prolonged use of preserved or boiled milk, or patent foods, and the neglect to correct

their want of freshness by giving orange juice. This sore mouth is characterized by swollen, bleeding gums, especially about the margin of the teeth. It is also associated with a train of symptoms resembling rheumatism. If the gums bleed, give orange juice and call the doctor.

In older children, these exquisitely tender little ulcers or blisters may appear on the tongue, on the gums, or on the inner surface of the lips. The margin of the gum is often swollen and bleeding. There is complete loss of appetite, attempts to eat producing great pain. The cause is an unbalanced diet—an excess of sweets or starches, associated probably with taking too little water.

**Canker
Sores
Aphthous
Stomatitis**

This condition does not indicate calomel or any strong purgative. Restrict the diet absolutely to liquids. If a laxative is needed, give milk of magnesia. The same application suggested for thrush (see above) should be used. If the ulcers are touched with 10 per cent argyrol solution, the sensitiveness is greatly relieved.

Intestinal Parasites

Children under two years are rarely infected with worms, though it is a common condition in older ones, especially if they live in the country, but even there, owing to improved sanitary conditions, they are not seen so often as formerly. The presence of a worm must mean the previous existence of a worm egg in the intestinal tract. It cannot come from dietetic errors.

**Round
Worm**

The round worm is the one referred to by the indefinite term "Worms." The egg is taken in by drinking infected water or by eating fruit off the ground, or by putting sticks in the mouth.

There are no definite symptoms of worms. Diminished or capricious appetite, furred tongue, large abdomen,

picking the nose, restless sleep and constipation are suggestive, but are more often due to intestinal indigestion from improper diet, or faulty mastication. The only positive sign is the passage of a worm, which usually means there are more, or the finding of worm eggs in the stool by a competent microscopist.

Giving worm medicine is by no means a harmless procedure, and should be ordered only by a physician.

**Tape-
worm** The tapeworm is a rare occurrence, in children especially. The egg is usually taken in raw meat. Do not use raw beef juice; see that all meat is cooked thoroughly—not necessarily well done, but enough to kill worm eggs. There are no positive symptoms of tapeworm. There may be malaise, a loss of flesh, and some digestive disorder, but all these are indefinite. The diagnosis is made by finding sections of the worm passed in the stools or escaped upon the clothing, or by finding the egg. In size and shape, these sections resemble a pumpkin seed. They may appear singly or several sections may be united end to end. A full grown worm is twenty feet long. The treatment is too elaborate for this treatise.

**Pin
Worm** Pin worms, thread worms, or seat worms are about one-third of an inch long, very like a piece of white thread. Usually they live in the lower rectum, and can often be seen clinging to a formed stool. The prominent and almost only symptom is intense itching about the rectal opening.

**Hook-
worm** The hookworm is rod-shaped, about three-eighths of an inch in length, with a bent or crooked end. The usual mode of entrance into the body is through sores on the feet of children living in infected regions. The hookworm has more decided and serious effects upon the patient, child or adult, than any other

parasite. Among the many symptoms could be mentioned: Severe anæmia (the pallor is intense), lack of energy, affecting growth and mentality, usually a diarrhœa, with loss of appetite. The parasite may be found in the washed strained stool, but a microscopical examination of the feces is the surest method of diagnosis. County and State Boards of Health employ trained microscopists who will make such examinations, usually without charge if you cannot get it done otherwise. Of course, the treatment must be directed by the physician.

Rectal Prolapse (Often Called Piles)

Rectal prolapse is frequently seen in relaxed, weak children, after an illness, especially diarrhœa, when the sphincter, or purse-string, muscle closing the bowel is relaxed, and the mucous membrane lining the bowel simply rolls out after a straining action. It is not serious and is easily corrected temporarily, but only permanently cured when the child regains strength and muscular tone. It is not a form of piles.

Keep the stools mushy; not loose, not hard. Do not allow straining nor permit him to sit at stool a long time.

Treatment If necessary, make him have the action lying down, using a napkin; sometimes a piece of adhesive plaster may be strapped across the buttocks, holding them together during the action. Give nutritious food and build up as rapidly as digestion permits. The protrusion at the anus recedes usually in a few moments; but if it does not, raise the child by the feet, standing him on his head and shoulders, and gently touch the protruded membrane; it will easily go back.

Sore Eyes

Pink eye is a common occurrence in babies. The eye or eyes are red and congested and there is an increased secretion of mucus or pus.

Prevention To prevent it, the lids should be sponged with cotton each morning to remove the night secretions and at bedtime to get rid of the dust of the day, using boiled water or boric acid solution. Do not put anything into the eye; simply wash the lids. Avoid the bright sunlight. See that the source of light is from behind him when sleeping or resting.

Treatment To relieve pink eye, dissolve a level teaspoon of boric acid in eight ounces of water; every two hours fill the little depression at the corner of the eye next to the nose, then pull the lids apart slightly and let the solution run in on the eyeball. If not greatly improved after a day's vigorous treatment, see a physician.

"Inactive Liver or Bilious Spells"

So-called bilious attacks are frequently seen in artificially fed babies and young children. The liver is not at fault. The food does not suit and intestinal fermentation is the result.

There are loss of appetite, foul breath, coated tongue, sallow complexion, nausea, slight fever, and whitish stools.

Treatment Give a light laxative and restrict the diet absolutely to liquids for a day or so. Digestive power is quickly restored after this rest, and he is soon normal again. Don't be satisfied with a dose of calomel. Analyze his previous feeding and find out why such a condition should have developed. The error in diet will probably be discovered and the recurrence of such spells prevented.

Nursing Cap, or Seborrhoea

Seborrhœa is a dark, yellowish crust on top of the head, possibly covering the entire crown; is seen frequently

under six months. It is not dandruff. The usual cause is neglect to properly cleanse the soft spot in the head, through fear of harming the baby, then after the crust appears it is aggravated by too persistent and forceful efforts to cleanse it with soap and by rubbing.

Apply every night olive oil or vaseline; next morning, remove such scales as may be loose and bathe in bran water. Use no soap.

CHAPTER IX.

MISCELLANEOUS

Starting Baby Correctly

Baby's first days are so fraught with dangers that at the risk of repetition a summary of some of the many important points to be watched is here given:

1. See that serious eye infection is prevented by dropping silver solution in the eyes soon after birth.

2. Give at once an oil rub and a quick, cleansing bath, care being taken to preserve body heat. Do not use strong soap or have the water too hot. In very weak babies, the maintenance of body heat is so important that the bath must be omitted or modified until he is stronger.

3. Weigh carefully and regularly. There is a loss of about one-fourth to one-half pound during the first four or five days. By the end of the first week he should begin to gain and continue to do so.

4. Give only warm boiled water during the first two days, one tablespoon every two or three hours while awake. Do not use a bottle and nipple at first. It draws so much easier than the breast that it may wean from the breast.

5. There is no need of teas or purgatives. The stools are naturally blackish green at first. He may be jaundiced, but drugs only aggravate the condition.

6. Put to both breasts every six hours for five minutes each. Do not let the mother hold him there longer; it injures the nipple. After the secretion of milk begins, then use one breast at each nursing interval, alternately at 6, 9, 12, 3, 6, 9 or 10 and 2. Wake in the day at

nursing time. Never allow nursing more than twenty minutes nor less than ten minutes.

7. Give one-half to one ounce of warm boiled water between several nursings. After the first month, it may be taken from the bottle and nipple.

8. Watch the stools for yellow stains, the signs of digested milk, which should appear about the fourth day.

9. The urine is scanty at first, sometimes none for twenty-four hours or longer. The first urination may be quite painful and show a brick-dust sediment on the napkin, which may explain much previous crying or fretting. Give plenty of water, which will relieve or prevent this condition.

10. If there is any doubt about there being enough milk in the breast to satisfy, weigh accurately before and after nursing and know how much is withdrawn. This is especially necessary in frail babies, not strong enough to draw, who might otherwise starve with plenty at their door.

11. See that baby is kept warm. If necessary, use hot applications, not touching, but near him.

12. Take the temperature in the rectum three times a day. If it is subnormal, it means too little food, or not enough covering or artificial heat. Fever means that he gets too little fluid, water or milk, or too much artificial heat, or it may be due to the beginning of an infection.

13. For twenty-four hours after birth baby should lie on the right side. After this, it is important to see that the position is changed frequently, so that the habit of lying in any one position is not formed.

14. Do not allow nervous excitement for the mother; company only sparingly, when necessity compels.

15. It is best for baby to be kept in an adjoining room, so that every movement will not disturb his mother.

Don'ts

Don't start the pacifier habit.

Don't put sugar in baby's drinking water.

Don't neglect weekly weighing.

Don't mistake hunger or thirst for colic.

Don't sleep with the baby.

Don't take him up every time he cries.

Don't make the child a toy for adults.

Don't give tastes of forbidden foods.

Don't wean for deficient quality or quantity of breast milk. Try to remedy the defect and make use of every drop with its wonderful nutritive and immunizing power.

Don't wean before the end of the first year unless imperative.

Don't attribute illness to teething.

Don't lift by the arms. The shoulder might be dislocated.

Don't suggest pain. If suspected in any part of the body, press on it or move it and watch his expression. Don't ask if it hurts.

Don't complain before a child; it's catching.

Don't permit a child to sit up after his regular bed hour.

Don't let him go to bed excited by play or story.

Don't bribe him to obey.

Don't tell a child a lie. If you make promises, fulfill them.

Don't give thoughtless commands.

Don't let him eat when excited or exhausted.

Don't let him specialize in one article of food. Teach him to eat everything.

Don't show temper while administering punishment.

Don't try to follow every adviser.

Table of Development

A thriving child should accord with these standards of development.

Read down to the age of your child and see if he is normal.

At birth: Weight, seven to seven and one-half pounds; length, twenty and one-half inches; head, thirteen and one-half inches in largest circumference. Will grasp finger. Eyes dull blue.

One month: Can hear; will follow light with eyes.

Two months: If artificially fed, should take three to four ounces every three hours, half milk with one ounce of added sugar to twenty-four hour quantity.

Three months: Weight, eleven pounds; length, twenty-three and one-half inches; first voluntary movements; recognizes his mother's voice; saliva and tears begin; eyes begin to change to permanent color. Begin to train to have regular stools.

Four months: Can hold head erect; should change to short clothes; first hair begins to shed. Discontinue midnight feeding. Should take two-thirds milk with one and one-half ounces of sugar in twenty-four-hour quantity; five or six ounces every three hours for six feedings. May begin orange juice carefully.

Five months: Plays with toys; laughs and "crows."

Six months: Weight, seventeen pounds; length, twenty-six and one-half inches. The two lower central incisor teeth appear. May take three-fourths milk.

Seven months: Can sit propped up with a pillow.

Eight months: Can sit alone. Upper central incisor teeth appearing. Should take full milk in winter; eight

ounces, four-hour interval, five feedings, 6, 10, 2, 6, 10, or the three-hour intervals, 6, 9, 12, 3, 6.

Nine months: Weight twenty pounds; length, twenty-eight inches; four teeth; attempts to stand. If entirely breast-fed, must now start one artificial feeding daily. May start beef juice; may suck toasted bread for ten minutes before or after a nursing.

Ten months: May crawl, if he ever does.

Eleven months: Speech begins—single words.

Twelve months: Weight, twenty-one pounds; length, twenty-nine and one-half inches; six or eight incisor teeth; can stand alone. Should control the bladder.

Fifteen months: Weight, twenty-three and one-half pounds; length, thirty and one-half inches; twelve teeth.

Eighteen months: Weight, twenty-four and one-half pounds; length, thirty-one and one-half inches; sixteen teeth. Fontanelle should be closed. Must walk by this age.

Table of Heights and Weights

AGE	Boys		Girls	
	Height Ins.	Weight Lbs.	Height Ins.	Weight Lbs.
Two years	34	27	33	26
Two and one-half years.....	35	29	35	28
Three years	37	32	37	30
Three and one-half years....	39	34	38	32
Four years	39	36	39	34
Five years	42	41	41	40
Six years	44	45	43	43
Seven years	46	50	45	47
Eight years	48	54	48	52
Nine years	50	59	49	57
Ten years	52	65	51	62

Recipes

Barley Water Rub into a paste two rounded teaspoons of barley flour (Robinson's, Brooks' or Johnson's can be purchased at any drug store). Add to a pint of boiling water in a double boiler and cook for thirty minutes. Replace the water boiled out so that there is a pint when finished. Strain through muslin. It keeps fresh on ice for twenty-four hours.

Rice water, wheat, oatmeal water (or barley water using barley grain), is made the same way, except that it should be boiled at least two hours. Replace the water boiled out and strain through muslin.

Cereal Gruels For older babies, twice this strength of cereal may be used. It tends to jelly on cooling and is called cereal gruel.

Cracker Tea Cracker tea or toast water: This is of about the same food value as a cereal water, but can be made quickly and is much more convenient. Pour one pint of boiling water over two toasted white crackers or one piece of toast or zwiebach, allow to stand five minutes, strain through muslin.

Flavoring Cereal Waters Cereal waters are insipid, and when ordered as a steady diet, especially for babies over seven months, they are not well taken. They may be made palatable by the addition of a few drops of vanilla and sugar (unless contra-indicated, when saccharine may be used as a sweetening), or a tablespoon of orange, grape, or lemon juice may be added to each eight ounces. These fruit juices seem to have no bad effect, even in diarrhœal conditions. One tablespoon of strong tea or coffee to each eight ounces will induce a child to take it when otherwise refused. Of course, tea and coffee should not be given regularly to children, but sick

babies often need a stimulant, and there is none better than caffeine.

Babies show decided preference in cereal waters—some will take one and refuse all others. Rice water is probably the favorite; cracker tea next.

**Albumen
Water**

Albumen water: Stir (do not beat—the froth is not palatable) the white of a fresh egg in six ounces of cool water; add a pinch of salt, a little sugar, and a teaspoon or more of fruit juice. If given in a bottle, it should be strained through cheesecloth. Feed cool or only slightly warmed. This is quite useful to relieve vomiting.

**Beef
Juice**

Do not use canned beef extracts. Broil a steak slightly on both sides and press out the juice with a lemon squeezer or meat press. More can be obtained if the steak is ground before broiling. Two to four ounces is the average amount from a pound of meat. It is more beneficial as a stimulant and tonic than as a food. The food value of an ounce of steak juice is only eleven calories, equal to that of one-half ounce of milk, while an ounce of scraped beef supplies sixty-five calories, or as much as three ounces of milk. The real nutrition of beef lies in the coagulated albumen of the fiber, not in the juice.

Cold process beef juice may contain tapeworm eggs. It is more economical and just as nourishing as the steak juice, but should not be given children.

Broths

Animal broths: One-half a pound of chicken, beef or mutton, containing some bones, is put in one pint of water and boiled over a slow fire for two hours, adding water as it is boiled out. Skim off the grease after cooling, salt, and serve warm. Rice flour or arrow-root may be used as thickening, and if the child's condi-

tion permits it, four ounces of milk may be added to the broth.

Soup Strained soup: Make in the same way as broth, except that a soup bunch—carrots, spinach, parsley, okra or onions—may be cooked with it and strained out. In this way the extract of the vegetables, containing half their mineral salts, is obtained without the risk of giving the pulp.

Vegetables The food value of vegetables lies chiefly in the mineral salts they contain, such as iron and phosphorus. Baby is supplied with iron in his body at birth, sufficient for the first year. Milk has a negligible quantity of iron. About the end of the first year this stored up supply has given out, and if milk-fed alone, he soon becomes pale and anæmic, and vegetables afford the best source of assimilable iron. If boiled in water, vegetables lose about one-half their salts by becoming dissolved into the water. The proper way to cook green vegetables to retain their full value is by steaming them over water, not in it.

Thirty or forty minutes is long enough to cook them. More than this toughens the fiber. In the summer, when we do not dare to use the vegetable pulp with children under three years of age, the extract of vegetables may be safely given by using vegetable soup, thus obtaining one-half their salts value without the dangerous fiber.

Eggs Coddled egg: Drop a fresh egg into boiling water. Remove the vessel from the stove, or turn out the gas. In eight minutes it jellies through and through. If preferable, it may be broken into the boiling water, which makes coddled poached egg.

A hard-boiled egg should be cooked at least twenty

minutes, through the pasty into the mealy stage. Mash the yolk with butter and spread on bread.

Scraped Steak Scraped steak or meat pulp: Scrape the raw steak with a table knife and broil the scrapings in butter as a sausage. Any steak may be scraped. Less fiber is obtained from a tough one, but the scrapings are all tender. Ground steak is almost as good, but the meat must be carefully selected, as everything passes through the grinder.

Spoon Bread Spoon bread, mush bread, or batter bread: One cup of white cornmeal; two cups of sweet milk or water; two eggs; one level teaspoon of baking powder; one-fourth teaspoon of salt. Beat the eggs slightly, add the meal, sifted with the baking powder and salt. Add milk slowly, stirring constantly. Heat in a pan one tablespoon of butter or lard and when boiling hot pour in the batter and cook in a quick oven until brown.

Buttermilk Buttermilk: Good, old-fashioned churned buttermilk is best, but difficult to obtain. Dairy buttermilk is questionable. Home-made buttermilk is easy to make. Allow a quart of good fresh milk, not pasteurized, to stand in a warm place, temperature about 85° to 95°, for twenty-four hours, until clabbered. Pour into a half-gallon fruit jar and shake for ten minutes. Remove the butter. A small glass churn will answer the same purpose, and is very convenient.

A more reliable method is this: Remove the cream of the milk, boil three minutes, cool to blood heat, add some reliable buttermilk germ culture obtained at drugstores, set in a warm place until it clabbers, and churn as above. Buttermilk should always be kept on ice in sterile glass jars.

Liquid Diet

Advised for all sick children over two years of age in any illness until the diagnosis is made and food prescribed by the physician:

Boiled milk, which may be flavored with cocoa or postum, buttermilk, strained soup, orange juice, weak lemonade, pineapple juice, egg albumen, meat juice, cereal gruels, grape juice diluted with equal parts water, gelatine and home-made ice cream made of boiled milk not cream, junket, coddled egg, or boiled custard made of milk and egg.

Solid or starchy foods, including toast and crackers, and cereals, are forbidden.

INDEX

PAGE	PAGE
Abdominal binder	10
Abdominal pain	94
Adenoids	71-112
Airing baby	14
Airing nursery	9
Albumen water	128
Appetite, Loss of	68
Artificial feeding	42
Baby talk	23
Bad habits	106
Band, Abdominal	10
Barley gruel	127
Barley water	55-127
Bath	15
Bath, Bran	91-115
Bath, Cold	111
Bath for fever	90
Bath, Hot mustard	91-120
Bath, Puddle	90
Bath, Sponge	90
Bathing ears	16
Bathing eyes	16
Bathing mouth	15
Bathing sick child	84
Batter bread	130
Bed	10
Bed-wetting	107
Beef juice	56-128
Beef, Scraped	130
"Bilious" spells	120
Birthmarks	102
Biting finger nails	106
Bleeding nose	98
Bleeding wounds	100
Boiling milk	44-46
Bottle feeding	42
Bottles	45
Bottles, Care of	47
Bottles, Weaning from	62
Bowel actions—See Stools.	
Bow legs	20
Bran bath	91
Bread	56-63
Brest feeding—See Nursing.	
Breast milk	41
Breast milk, Analysis	41
Breast, Weaning from	39
Breast milk withdrawn	41
Broth	128
Burns	99
Butter	65
Buttermilk	68-130
Buttocks, Chafing	115
Canned vegetables	70
Canker sores	117
Cathartics—See Purgatives.	
Cereals	63
Cereals, Uncooked	63
Cereal gruels	127
Certified milk	44
Chafing buttocks	115
Change to short clothes	11
Chewing	69
Circumcision	110
Clothes, First	10
Clothes, Short	11
Clothes, Sleeping	13
Clothes, Summer	12
Coddled egg	129
Cold sponge bath	111
Cold feet	10
Colds	110
Colds in nursing mother	28
Colic	32
Colitis	80
Complemental feeding	37
Condensed milk	57
Contagion	84
Constipation	77
Contra-indications to nursing	27
Convulsions	97
Cough mixtures	112
Covers	10
Covers, Kicking off	18
Cows' milk	42
Cracker habit	107
Cracker tea	127
Cream	49-79
Cross-eyes	22
Croup	95
Croup, Membranous	97
Crying	100
Dandruff	121
Deafness	113
Decay of teeth	72
Delayed speech	23
Dentition—See Teething.	
Desserts	69
Development	18
Diarrhœa	80
Diet for nursing mother	27
Diet, First year	26
Diet, Second year	61
Diet, Third year	68
Diet, Summer	66
Diet, Winter	67
Diet lists	66
Dirt eating	107
Disorders caused by feeding.	76
Don'ts	124

	PAGE		PAGE
Dry milk	58	Height	19
Dysentery	80	Herd milk	43
Ears, Protruding	102	Hernia at navel.....	11
Ear, Foreign body in.....	99	Hookworm	118
Earache	99	Hot bath	91
Early waking hours.....	31	Hot pack	91
Eggs	64-129	Hunger	34
Emergencies	93	Hygiene of nursing mother.	26
Emptying the breasts.....	30	Indiscretions in diet.....	93
Enema	79	Infant foods	56
Eneuresis	94	Illness, Care during	84
Evaporated milk	58	Illness of nursing mother...	27
Excess of fats, sugars, pro-		Injections—See Enema.	
teids	54	Interval of feeding	48
Exercise for mother	27	Intestinal indigestion	120
Eyes, Care of	16-22	Intestinal parasites	117
Eyes, Inflamed	119	Jaundice	122
Failing appetite	68	Kicking covers	18
Fat in milk	54	Knit bands	11
Feeding from breast.....	26	Lime water	50
Feeding, Artificial	45	Liquid diet	131
Feeding, Bottles	47	Malt sugar	49
Food during first year.....	26	Massage	78
Food during second year....	61	Mastication	69
Food during third year	70	Masturbation	107
Feeding intervals	29-62	Meat	64
Feeding, Mixed	37	Meat, pulp	64
Fever	90	Membranous croup	97
Finger sucking	106	Menstruation in nursing	
First clothes	10	mothers	28
Flavoring cereal waters ...	127	Milk	41
Fontanel	21	Milk after second year....	68
Food in illness	83	Milk, Boiled	46-57
Foods, Patent	82	Milk, Dry	58
Fooler	106	Milk during second year....	61
Forced feeding	87	Milk examination	41
Foreign body in ear.....	99	Milk, One cow's.....	43
Foreign body in nose.....	99	Milk, Herd	43
Foreign body swallowed....	94	Milk, Pasteurized	45
Fruits	55-83	Milk, Prepared	45
Fruit juices	55	Milk, Sterilized	44
Gain in weight	19	Milk, Summer changes in...	59
Gas in stomach.....	76	Milk sugar	49
Germ	44-84	Minor ailments	102
Goats' milk	55	Mixed feeding	37
Good habits	105	Mother's milk—See Breast	
Gravy	56	Milk.	
Gruels	127	Mouth, Cleansing of.....	71
Habits, Bad	106	Muscular development	20
Habits, Good	105	Mush bread	130
Habits, Nursing	28	Mustard bath	91
Hair	22	Mustard pack	91
Head, Holding up.....	20	Nail biting	106
Head, Size of	20	Naps	16
Heat, Prickly	126	Napkins	13
Heating nursery	9	Nervous child	103

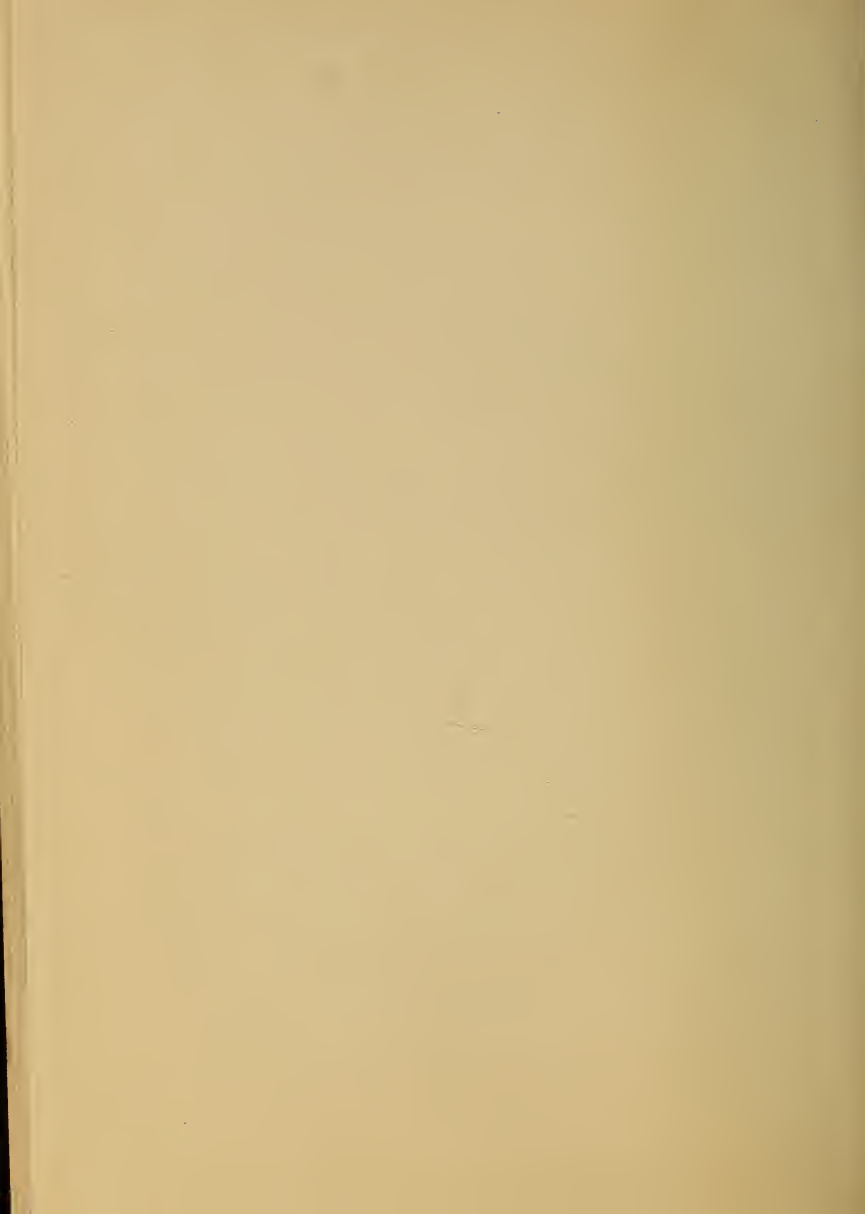
INDEX

III

PAGE	PAGE
Newborn, Care of.....53-122	Sore eyes 119
Night clothing 13	Soup 129
Night feeding 30	Speech 22
Nipples 45	Speech delayed 23
Nose bleeding 98	Stammering 23
Nose, Foreign body in..... 99	Starting artificial food..... 51
Nursery 9	Starting newborn baby's food 52-122
Nursing cap 120	Sterilizing milk 44
Nursery chair 77	Stools, Abnormal 54
Nursing mother's diet 26	Stools, Normal 24
Nursing mother's hygiene..... 26	Sucking thumb 106
Nursing during mother's ill- ness 28	Sugar 49
Nursing habits 28	Summer clothing 12
Nursing regulations 28	Summer complaint 80
Oatmeal water 127	Supplemental feeding 38
Orange juice 55	Swallowing foreign bodies... 94
Pacifiers 106	Sweets after second year... 69
Pack, Hot mustard..... 91	Sweets for children..... 65
Parasites, Intestinal 117	Talk, Baby 23
Pasteurized milk 45	Talking 22
Patent foods 56	Tapeworm 118
Pigeon toe 20	Teeth, Care of..... 71
Piles 119	Teething 22-81
Pink eye 119	Teeth, Temporary 21
Pin worms 118	Temperature of bath 15
Pregnancy, Effect of, on breast milk 28	Temperature of food..... 47
Preparation of food 45	Temperature of nursery ... 9
Prickly heat 115	Thermos bottle 74
Prolapse of rectum..... 119	Third year feeding 70
Protruding ears 102	Throat examination 86
Puddle bath 90	Thrush 116
Purgatives 34-78-83-94	Thumb sucking 106
Rectal prolapse 119	Toast water 127
Rest for nursing mothers... 26	Tongue tie 23
Restless sleep 17	Tonsils 112
Rice water 127	Training children...17-28-77-105
Rickets 57	Traveling baby 73
Rubber napkins 75	Underclothing 11
Rupture at navel..... 11	Urine 24
Scalds 99	Urine, Collecting specimen.. 25
Scales 18	Urine suppression 25
Scraped steak 130	Vegetables 64-129
Scurvy 116	Vegetable soup 129
Seat worms 118	Ventilation, Nursery 9
Second year feeding..... 61	Vomiting, Acute 93
Shirts 11	Vomiting, Chronic 76
Shoes 11	Walking 20
Short clothes 11	Washing mouth 15
Sitting alone 20	Water 28-64-71-87
Sick room 84	Weaning 39
Skirts 11	Weaning from bottle 62
Sleep 16	Weights 126
Sleeping garments 13	Weighing, Regular 19
Sleep, Disturbed 17	Wetnurse 40
	Worms 117

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